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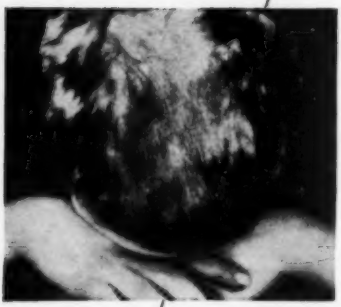
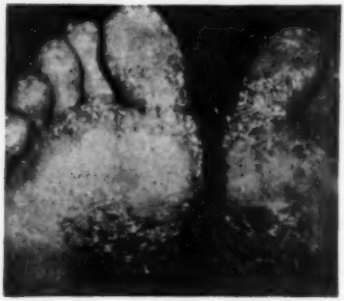


tinea capitis

"More effective in ringworm of the scalp than any other topical agent."[1]



tinea pedis

In "athlete's foot" a combined cured and improved rate of 95% has been obtained.[1]

Also indicated in

tinea corporis
tinea cruris
tinea versicolor
tinea of the nails

"broad antifungal spectrum ...good cutaneous tolerance."[1]

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1. Stritzler, C.; Fishman, I. M., and Laurens, S.: *Transactions New York Acad. Sc.*, *13*:81, Nov., 1950.

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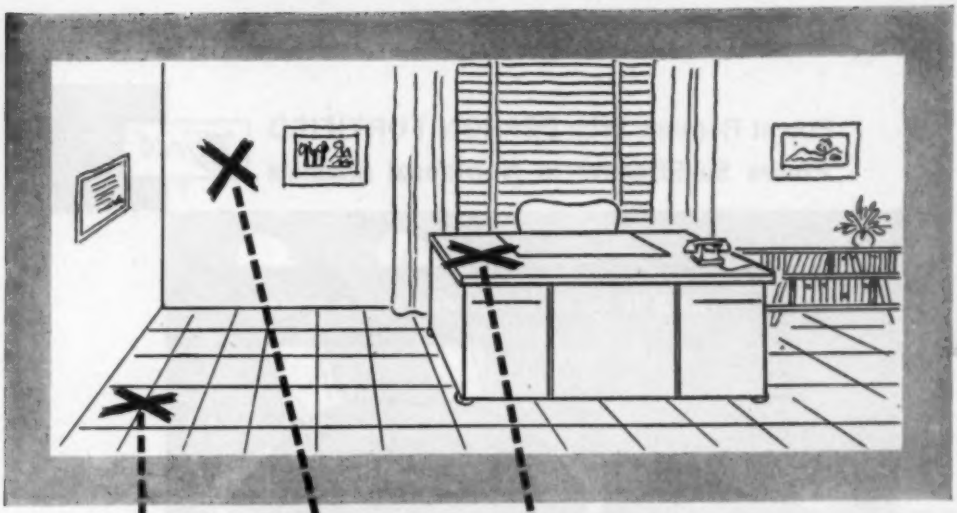

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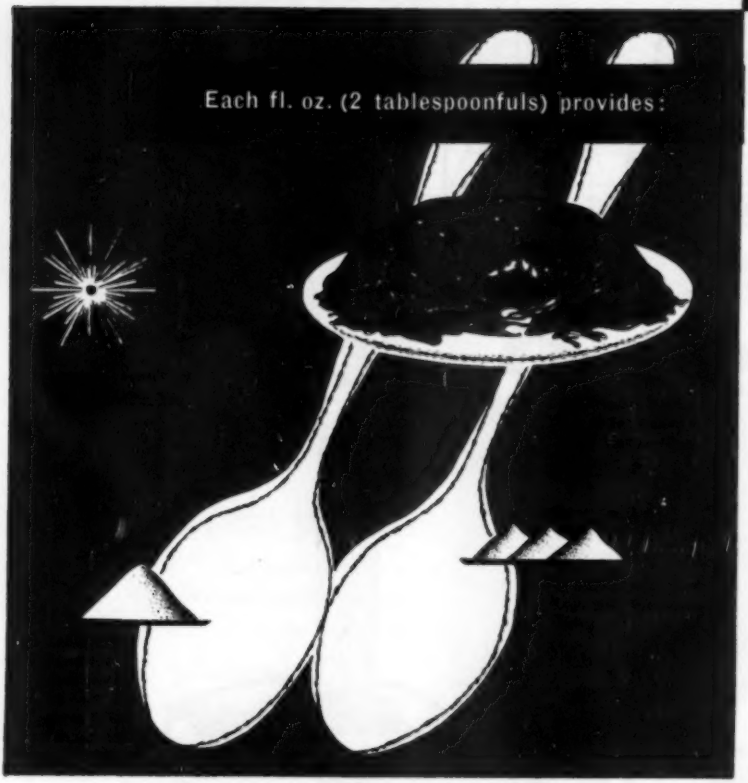

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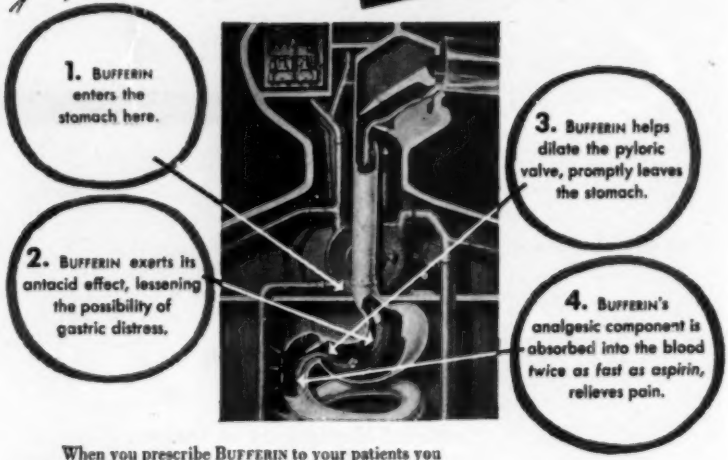

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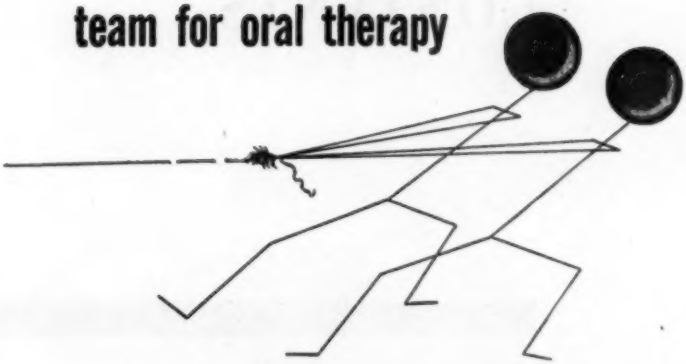

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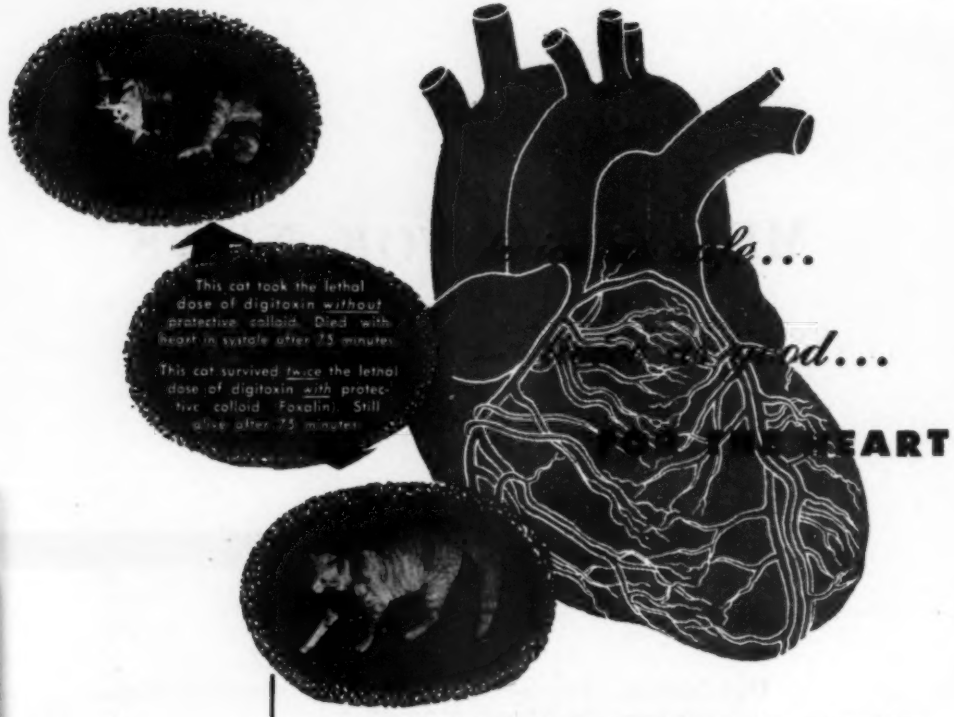

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1. Bram, I.: Arch. Ped. 67: 543-552, 1950.

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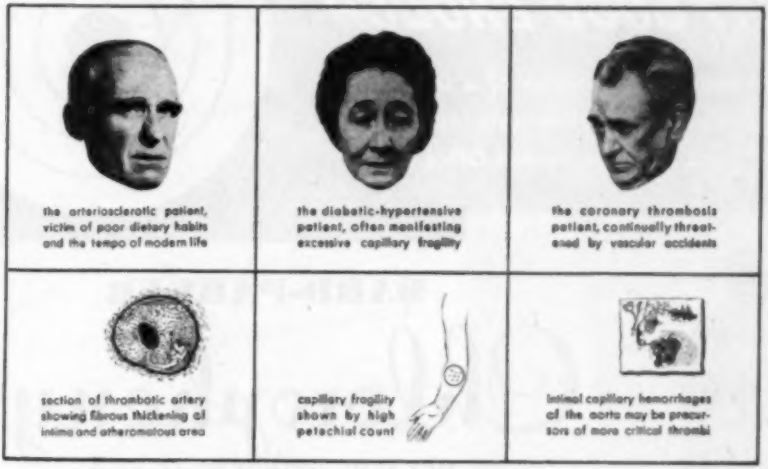

the arteriosclerotic patient, victim of poor dietary habits and the tempo of modern life

the diabetic-hypertensive patient, often manifesting excessive capillary fragility

the coronary thrombosis patient, continually threatened by vascular accidents

section of thrombotic artery showing fibrous thickening of intima and atheromatous area

capillary fragility shown by high petechial count

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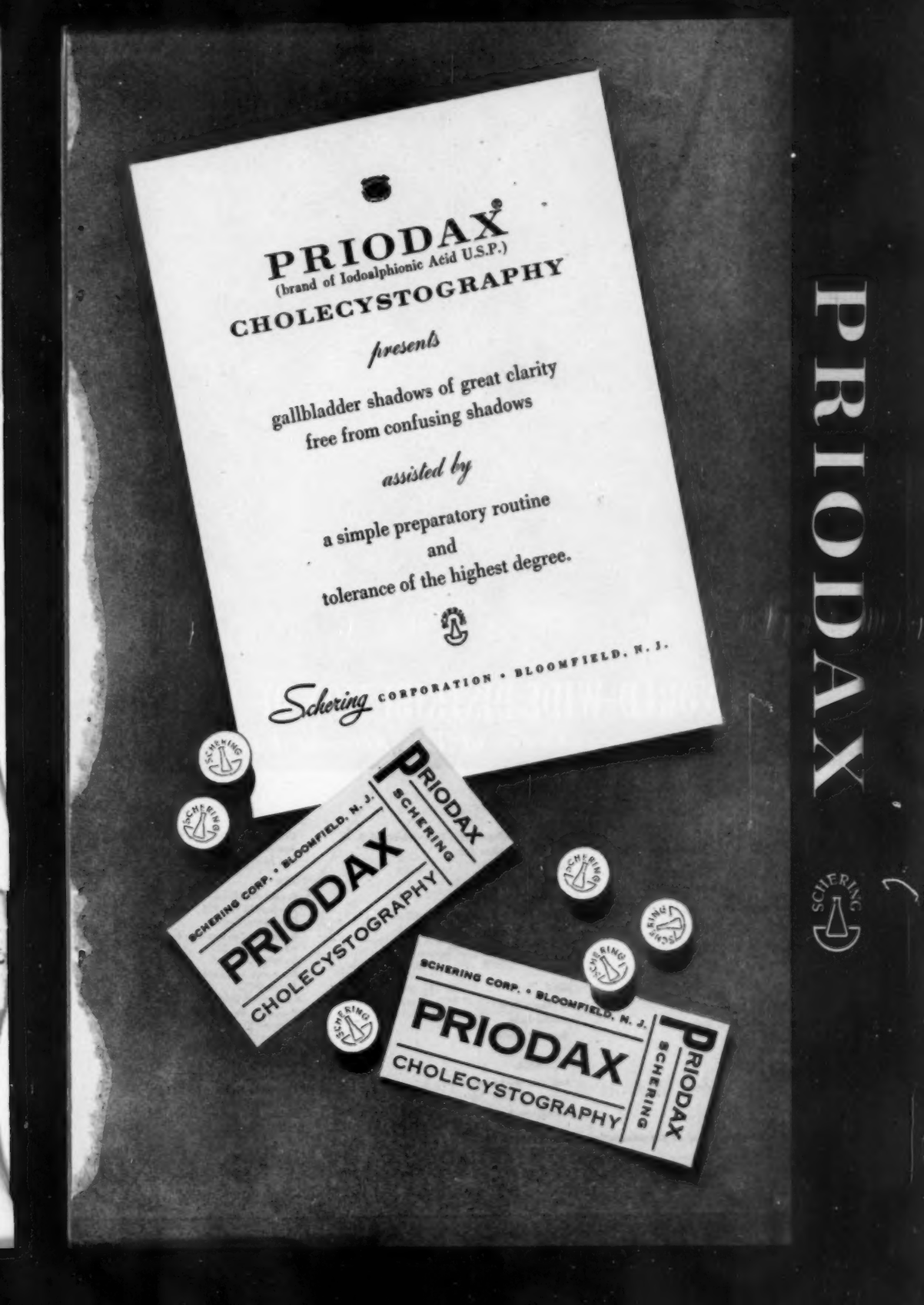
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1 male climacteric = 2 or more patients

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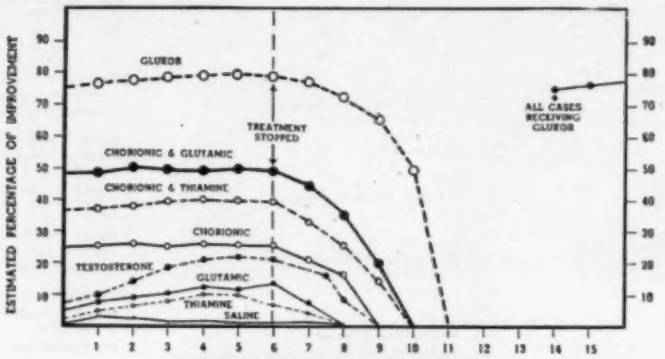
A FORTIFIED GONADOTROPIN

GLUKOR contains gonadotropic hormone and therefore represents ***stimulation rather than replacement therapy.***[2] It is therefore, more rapidly effective than testosterone—non toxic and stable.

GLUKOR has been clinically evaluated in a large series of cases. It relieved all the major symptoms and restored the patents' mental and physical well-being.[3]



Relation of treatment with GLUKOR to its various components, testosterone and normal saline. 120 cases (not concurrent) of male climacteric divided into 8 groups of 15 each. Note the superiority of GLUKOR over testosterone.

GLUKOR — Each cc. contains: Chorionic gonadotropin **200.0 I.U.**
Thiamin HCl **25.0 mg.**
Glutamic acid **52.5 p.p.m.**

Supplied: 25 cc. ampul vials

Reprint and professional literature available by writing to:

RESEARCH SUPPLIES
Capital Station Albany, N. Y.

REFERENCES: 1. Werner, A. A.: The Male Climacteric, J.A.M.A., 112:144 (April 15) 1939. 705:709 (March 24) 1945. 188-194 (September 28) 1946.
2. Thompson, W. O.: Uses and Abuses of the Male Sex Hormone, J.A.M.A., 185-188 (September 28) 1946.
3. Gould, W. L.: The Male Climacteric, Med. Times, 79:3 (March) 1951.

Handier than ever

Red Cross Cotton Balls — the handiest form of famous Red Cross Cotton — are now handier than ever in this convenient new professional dispenser.

COTTON BALLS

PROFESSIONAL PACKAGE OF 500

- sterile
- highly absorbent
- uniform in size and shape

No connection whatever with the American National Red Cross

RETAFEN *Ointment*

with Hexachlorophene and other effective medicaments

For minor skin irritations

ANTIPRURITIC • ANTIBACTERIAL • ANTIFUNGAL

Dihydroxyhexachlorodiphenylmethane (Hexachlorophene), Acid Carbolic (Phenol), Resorcinol, Oil of Tar Rectified and Zinc Oxide in a special, creamy white ointment base—non-irritating, easily washable and non-staining to bedding and clothing.

Supplied in ½ ounce tubes, individually cartoned.

Send for samples and detailed information.

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VANPELT & BROWN, Inc. *Pharmaceutical Chemists* **RICHMOND 4, VA.**

In coronary artery disease...

BALANCE ..... cholesterol - phospholipid .....

with B-TROPIC

Trademarks

LIPOTROPIC-OXYTROPIC THERAPY

"It is hypothesized that the levels of serum cholesterol and serum phospholipids are less important in coronary artery disease than is the ratio of cholesterol and phospholipids."[1]

"...the lipotropic agent choline was effective in significantly reducing the mortality rate due to recurrent coronary thrombosis ...in... 115 patients with proved coronary atherosclerosis."[2]

The new **metabolic** concept of atherosclerosis emphasizes the importance of correcting the impaired metabolism of both fat and oxygen in this disease.[3,4,5] B-TROPIC* stimulates phospholipid turnover—helping to bring about a normal cholesterol-phospholipid balance—and enhances the body's oxidative efficiency.

Other indications: Hepatic cirrhosis, diabetic hypercholesterolemia and liver dysfunction, and other disorders of fat metabolism.

2 Agreeable, Sugar-Free Dosage Forms

B-TROPIC SOLUTION Each 5cc contains:		B-TROPIC CAPSULES Each capsule contains:	
Choline Dihydrogen Citrate (47% choline base)	6 Gm.	Choline Dihydrogen Citrate	875 mg.
Inositol	2 Gm.	Inositol	125 mg.
Thiamine Hydrochloride	3 mg.	Thiamine Hydrochloride	1 mg.
Riboflavin	2 mg.	Riboflavin	0.5 mg.
Nicotinic Acid	20 mg.	Nicotinic Acid	5 mg.
In a flavored, sugar-free vehicle			

1. Gerner, R. R., et al.: Circulation 17: 1107 (1958). 2. Morrison, L. M.: Ann. Int. Med. 49: 1 (1958). 3. Gofman, J. W., et al.: Circulation 18: 172 (1958).

SUPPLIED: B-TROPIC Solution—bottles containing 1 pt. and 1 gal. B-TROPIC Capsules—bottles containing 100, 500, and 1,000.

*Trademark of The Vale Chemical Co., Inc.

THE VALE CHEMICAL CO., INC. pharmaceuticals ALLENTOWN, PA.

All physicians are invited

to a launching . . .

of a NEW Warner product . . .

NEOTROPINE* Hydrochloride

Low Toxicity

Practically devoid of by-effects in therapeutic dosage

RELIEVES spastic pain and discomfort

a more effective antispasmodic (anticholinergic) drug

Bronchospasm, cardiospasm, pylorospasm, biliary spasm, intestinal spasm, ureteral spasm and other spastic disorders of the gastro-intestinal and genito-urinary tracts are quickly and effectively combated with **NEOTROPINE* Hydrochloride** 'Warner,' the latest development of Warner research laboratories. This new anticholinergic drug "blocks" the undesirable nerve impulses.

NEOTROPINE* Hydrochloride is of low toxicity and its use attended by minimum by-effects. The usual unwelcome complications of antispasmodic therapy such as dryness of the mouth and disturbances of the cardiovascular, respiratory or visual systems are not encountered in the use of **NEOTROPINE***.

NEOTROPINE* Hydrochloride will be found highly effective as a parasympathetic inhibitor in all spastic (smooth muscle) disorders.

Dosage: One tablet, 50 mg., of **NEOTROPINE* Hydrochloride** orally every 4 to 6 hours, usually before each meal and at bedtime. In the average case a total daily dosage of 200 mg. (4 tablets) provides an adequate and satisfactory antispasmodic action.

Packaging: **NEOTROPINE* Hydrochloride** 'Warner' is available in the form of sugar-coated oral tablets, 50 mg. each, bottles of 100.

*T. M. Reg. U. S. Pat. Off.

WILLIAM R. WARNER · Division of Warner Hudnut, Inc.

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The only broad-spectrum antibiotic available in concentrated drop-dose potency, Crystalline Terramycin Hydrochloride Oral Drops provide 200 mg. per cc.; 50 mg. in each 9 drops. Indicated in a wide range of infectious diseases, Terramycin Oral Drops are miscible with most foods, milk and fruit juices, affording optimal ease and simplicity in administration.

Supplied — *2.0 Gm. with 10 cc. of diluent, and calibrated dropper.*

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As if there were no germ of disease

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That's why so many physicians everywhere recommend Pet Evaporated Milk for infant formula. Sterilized in its sealed container, permanently protected from any source of contamination, Pet Milk is completely safe, as if there were no germ of disease in the world.

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for ACUTE OTITIS MEDIA
REMOVAL OF IMPACTED CERUMEN
AS AN ADJUNCT TO SYSTEMIC ANTI-INFECTIVE THERAPY
CONTAGIOUS DISEASE EAR INVOLVEMENTS

FORMULA: Glycerol (DOHO) ... 17.90 GRAMS
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Antipyrine ... 0.81 GRAMS
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for CHRONIC SUPPURATIVE OTITIS MEDIA
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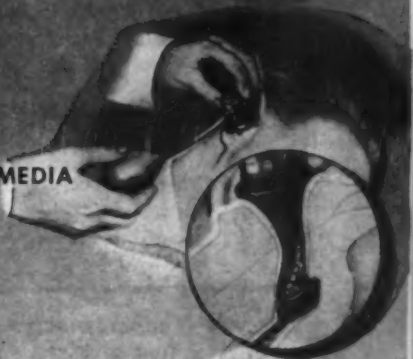
FORMULA: Urea ... 2.0 GRAMS
Sulfathiazole ... 1.6 GRAMS
Glycerol (DOHO) Base 16.4 GRAMS



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Nasal Decongestant *WITHOUT* Circulatory or Respiratory Effect

for COMMON COLD · SINUS INFECTIONS · PRE AND POSTOPERATIVE NASAL SHRINKAGE · HAY FEVER ALLERGIC AND HYPERTROPHIC RHINITIS

FORMULA: Desoxyephedrine Saccharinate 0.50% w/v in an isotonic aqueous solution with 0.02% Laurylammonium saccharin. Flavored. pH 6.4.

PLEASANT—EFFICIENT
NON-TOXIC—BACTERICIDAL

Supplied in **THE DOHONY SPRAY-O-MIZER*** (Combination Spray and Dropper)
*TRADE MARK—PAT. PEND.
Also for Office and Hospital use in Pint bottles.

Scientific and Clinical Data sent on request

DOHO CHEMICAL CORP., 100 Varick St., New York 13, N. Y.

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Part of a series on its expanding uses.

Wyeth

LOCAL ANESTHESIA IN TONSILLECTOMY

FROM A RECENT REPORT:[1]

- Wydase is a safe adjunct to solutions used for local anesthesia in tonsillectomy and in other surgical procedures.
- Rapid diffusion enables the surgeon to begin the operation immediately after injection and to use less material.
- Healing is hastened because there is less tissue reaction.
- There was no untoward reactions, local or general.

1. Heinberg, C.J.: Eye, Ear, Nose & Throat Monthly 30:31 (Jan. 1951.

In Hypodermoclysis—WYDASE prevents pain from stretching of tissues, facilitates introduction of fluids when intravenous administration is impractical.

In Local Anesthesia—WYDASE, added to the local anesthetic, contributes depth and facility to anesthesia, minimizes tissue distortion.

Highly purified WYDASE in dry form is stable indefinitely; keeps in sterile solution in a cool place for 2 weeks—refrigeration unnecessary.

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WYDASE*

HYALURONIDASE, WYETH

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NOT A SALT SUBSTITUTE

For edema control.

Sodium withdrawal—
without sodium depletion

NATRINIL
POWDER

No offensive odor or taste.
Maximum palatability.
Minimum dosage.
Great exchange capacity.
Fine texture.
Mixes readily.
Less bulk required.

Natrinil prevents edema formation by withdrawing sodium from the gastrointestinal tract. Natrinil is indicated in the management of congestive heart failure, hypertension, cirrhosis, or whenever a "salt-free" or a low sodium diet is required. Natrinil allows a more normal diet.

A Cation Exchange Resin of the Carboxylic Type
Hydrogen Cycle 80%
Potassium Cycle 20%

Natrinil Powder
Available, bottles of 10 oz.
Individual packets of 10 Gm. each, boxes of 24.

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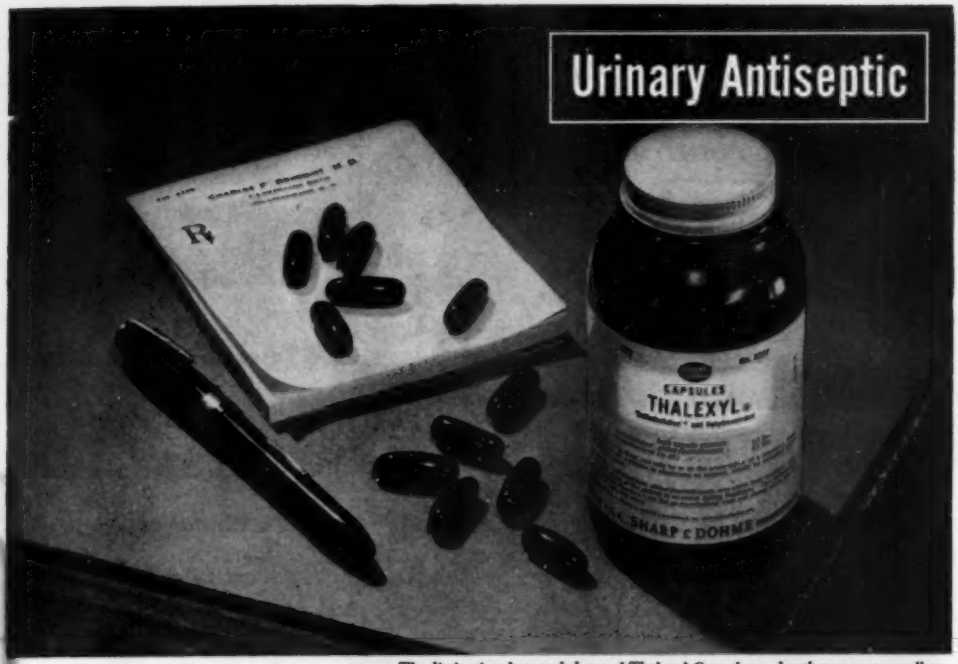


The distinctive elongated shape of Thalexyl Capsules makes them easy to swallow.

Simultaneous use of Sulfathalidine® and Hexylresorcinol recommended for thorough treatment of

COMMON URINARY-TRACT INFECTIONS

Clear, sparkling urine is usually obtained within one week.

THALEXYL® Capsules contain *Sulfathalidine®* and *hexylresorcinol* in a single dosage form—provide bacteriostatic and analgesic actions for control of infection and relief of symptoms in acute and chronic *cystitis*, *pyelitis*, and *ureteritis*.

Symptoms are usually brought under control promptly: Pain, burning, and tenesmus are relieved. Especially gratifying is the release from the frequent urge to urinate which, before treatment, is sometimes so troublesome as to wake patients several times during the night.

THALEXYL is effective against *Escherichia coli* and various cocci. It usually renders urine sterile within one week, but medication should be continued for a total of three weeks to ensure against recurrence of infection.

Recommended dose for adults: 4 capsules three times a day (total daily dose of Sulfathalidine: 6.0 Gm.; of hexylresorcinol: 1.2 Gm.).

Recommended dose for children 6 to 12 years of age: 3 capsules three times a day (total daily dose of Sulfathalidine: 4.5 Gm.; of hexylresorcinol: 0.9 Gm.).

Capsules should be taken after each meal to avoid the possibility of gastric irritation; they should be swallowed whole with water. Fluid intake should be restricted, and diuretics should be avoided during treatment. Sharp & Dohme, Philadelphia 1, Pa.

THALEXYL®

Capsules Sulfathalidine® and Hexylresorcinol

COMBINATION

for
supplementary effects
wherever estrogen-androgen therapy is indicated...

- ***i. e.*** In fractures and osteoporosis in either sex to promote bone development, tissue growth, and repair.
- ***i. e.*** In the female climacteric in certain selected cases.
- ***i. e.*** In dysmenorrhea in an attempt to suppress ovulation on the basis that anovulatory bleeding is usually painless.
- ***i. e.*** In the male climacteric to reduce follicle-stimulating hormone levels.

A steroid combination which permits utilization of both the complementary and the neutralizing effects of estrogen and androgen when administered concomitantly. Thus certain properties of either sex hormone may be employed in the opposite sex with a minimum of side effects. Each tablet provides estrogens in their naturally occurring, water-soluble, conjugated form expressed as sodium estrone sulfate, together with methyltestosterone.

No. 879—Conjugated estrogens equine ("Premarin") ..... 1.25 mg.
Methyltestosterone ..... 10.0 mg.
Bottles of 100 tablets (yellow)

No. 878—Conjugated estrogens equine ("Premarin") ..... 0.625 mg.
Methyltestosterone ..... 5.0 mg.
Bottles of 100 tablets (red)

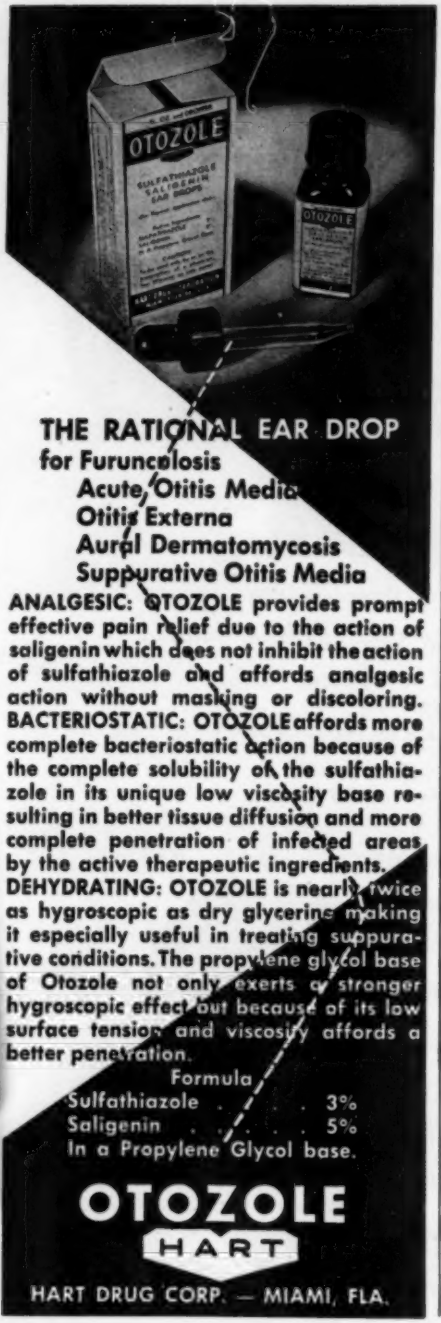
8109

Ayerst

"PREMARIN"
with
METHYLTESTOSTERONE

for combined estrogen-androgen therapy

Ayerst, McKenna & Harrison Limited
22 East 40th Street, New York 16, N. Y.



LETTERS TO THE EDITOR

This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers, who are invited to comment on controversial subjects, names will be omitted when requested.

MENIERE'S SYNDROME

June 13, 1951

"Dr. Miles Atkinson has written very interestingly about his 'Investigations and Management of Labyrinthine Conditions Pertaining to Ménière's Syndrome' in the May, 1951 issue of the MEDICAL TIMES (Vol. 79 No. 5).

"From the medical point of view, I would like to supplement this interesting situation by additional experience along this line over many years.

"The characteristic Labyrinthine Syndrome involving the vestibular division of the eighth cranial nerve without or with cochlear involvement was as follows: Directional dizziness toward the involved side with positional change. At times it was more evident in the front-to-back plane, at other times in the side-to-side plane; or, with rotational change. Nystagmus, or nausea with or without vomiting, varied with the individual or at times the acuteness or degree of involvement.

"Some persons were aroused from sound sleep by dizziness when they rotated positions while in bed, others in the act of lying down, sitting up, getting up or otherwise. When ephedrine or other synthetic

—Continued on page 40a

FAILURE OF VITAMINS ALONE

... can now be explained!

It is now definitely established that *both vitamins and minerals* are essential components of the vital enzymes which control all metabolic processes.

Vitamins alone are merely activators which control the body's appropriation of minerals. Lacking these minerals, vitamins are virtually useless.[1]

In all conditions in which multivitamin therapy is indicated, VITERRA—by supplying adequate amounts of not only 9 vitamins but also 11 minerals and trace elements—produces more *rapid*, and more *dependable response*.

To rapidly promote optimal health and maximal functional efficiency, specify:

1. Bulletin of Florida State Dept. of Agriculture, No. 123, pp. 20-30.

Viterra is also available as *VITERRA LIQUID*, palatable, non-alcoholic, easy-to-take... especially suited for children and the aged.

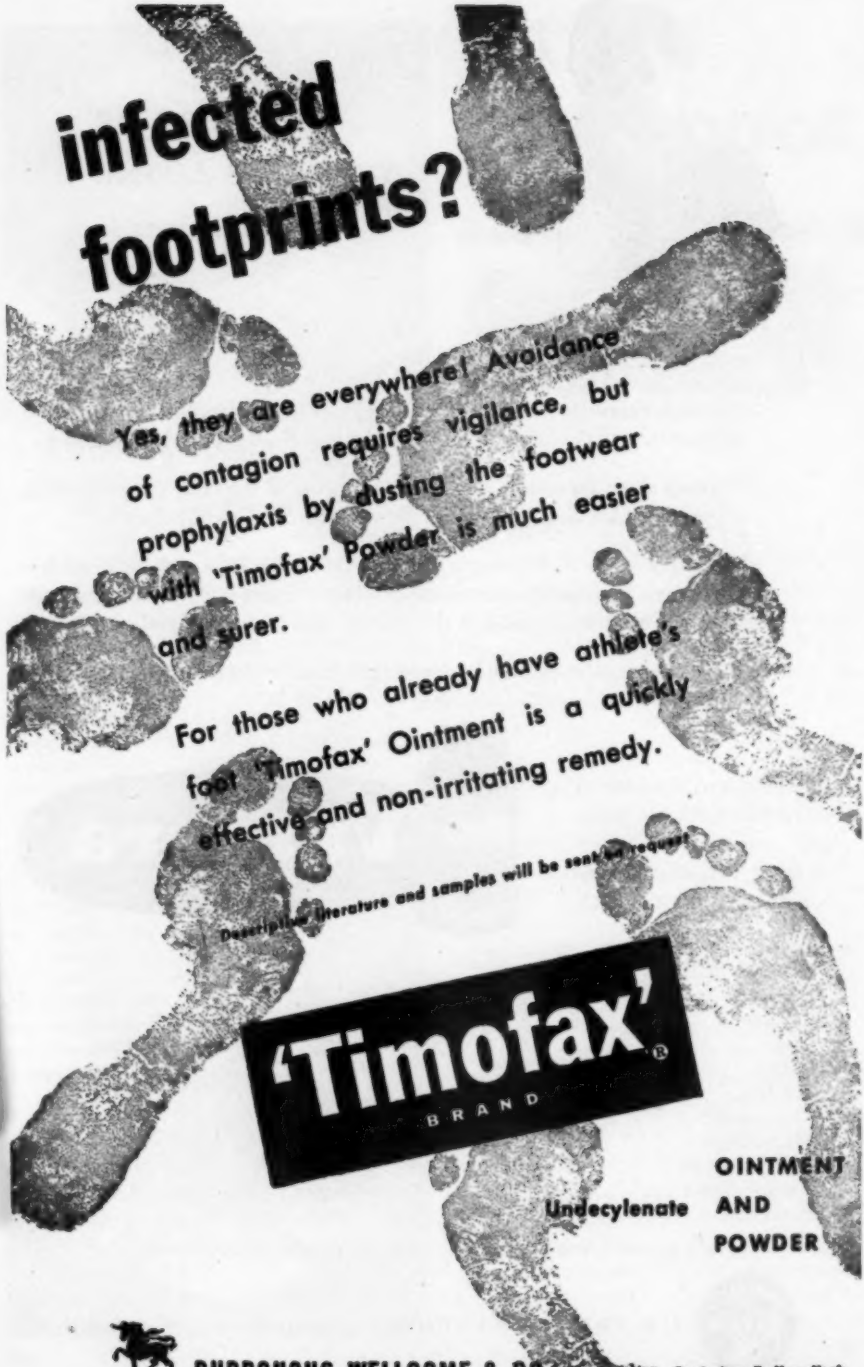
Each Capsule Contains:

Cobalt	0.1 mg.	Zinc	1.2 mg.
Copper	1 mg.	Vitamin A	5,000 U.S.P. Units
Iron	10 mg.	Vitamin D	500 U.S.P. Units
Iodine	0.15 mg.	Thiamine HCl	3 mg.
Calcium	213 mg.	Riboflavin	3 mg.
Manganese	1 mg.	Pyridoxine HCl	0.5 mg.
Magnesium	6 mg.	Niacinamide	25 mg.
Molybdenum	0.2 mg.	Ascorbic Acid	50 mg.
Phosphorus	165 mg.	Pantothenate	5 mg.
Potassium	5 mg.	Tocopherols, Type IV	5 mg.

Available at prescription pharmacies... supplied in bottles of 100 capsules

ROERIG

J. B. ROERIG AND COMPANY, 536 LAKE SHORE DRIVE, CHICAGO 11, ILL.


infected
footprints?
Yes, they are everywhere! Avoidance of contagion requires vigilance, but prophylaxis by dusting the footwear with 'Timofax' Powder is much easier and surer.
For those who already have athlete's foot 'Timofax' Ointment is a quickly effective and non-irritating remedy.
Descriptive literature and samples will be sent on request
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OINTMENT
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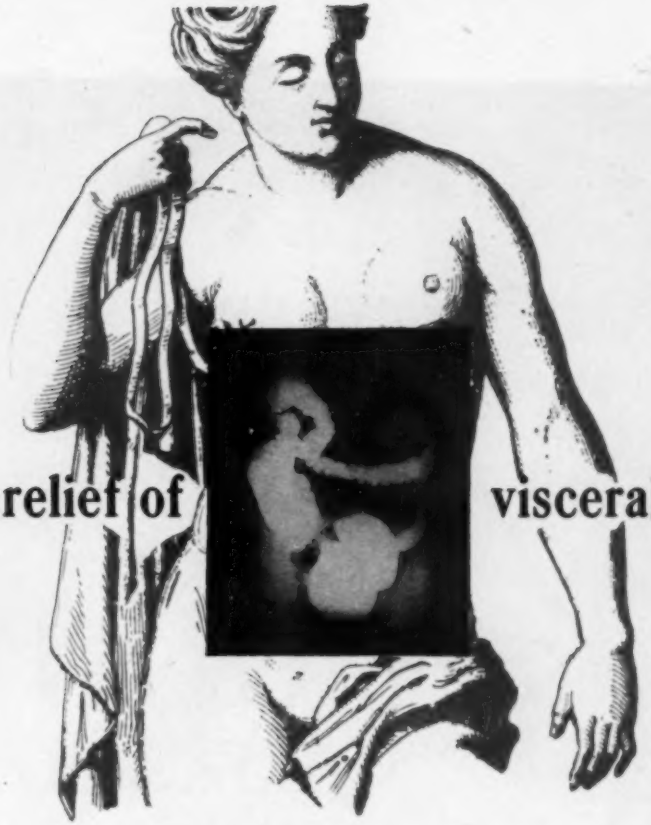
BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe 7, New York



For relief of visceral spasm

In disturbances involving smooth muscle spasm, optimal therapy controls both the psychic and somatic factors involved. Trasentine-Phenobarbital, with components having both peripheral and central action, obtains therapeutic effect in moderate dosage, without the side effects of belladonna on the heart, pupil or salivary glands.

Trasentine-Phenobarbital has many indications in gastroenterology, gynecology, urology, and also in radiology, where it is effective in controlling the symptoms of radiation sickness.

Issued: *Trasentine - Phenobarbital Tablets* (yellow) containing 50 mg. Trasentine® (adiphenine) hydrochloride with 20 mg. phenobarbital, in bottles of 100 and 500.

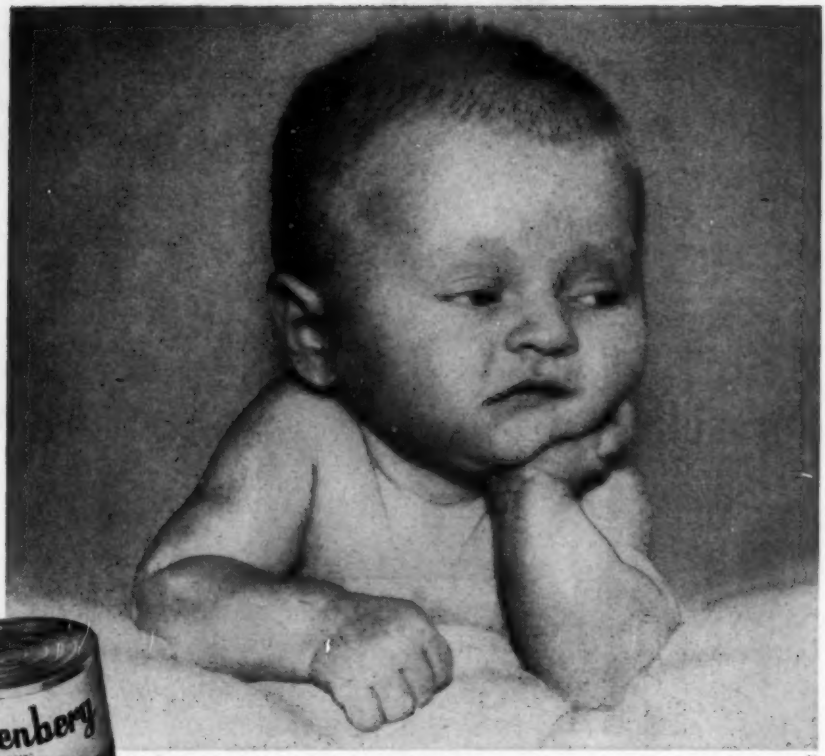
Trasentine Tablets (white) without phenobarbital, containing 75 mg., in bottles of 100 and 500.

2/1653B

Trasentine-Phenobarbital

potent spasmolytic **mild sedative**

Ciba PHARMACEUTICAL PRODUCTS, INC., SUMMIT, N. J.



"You Know I'm Allergic to Cow's Milk!"

Prescribe Nutritionally Adequate Meyenberg® Evaporated Goat Milk where allergy to cow's milk lactalbumin is suspected

When substituting for mother's or cow's milk in the infant's diet, the factor of protein quality and biological value is of paramount importance.

Goat Milk is nutritionally equivalent to cow's milk in the human infant.[1]

[1] *Gamble, J. A.; Ellis, N. R. and Besley, A. K., U. S. Dept. of Agric. Tech. Bull. No. 671, page 61, (March 1939.)*

Available Without Charge
Recipe Folder showing how Meyenberg Evaporated Goat Milk can be used in cooking.

Also for baby: HI-PRO® high protein, low-fat powdered cow's milk.

For further information write . . .

PRODUCTS

Jackson-Mitchell Pharmaceuticals, Inc.

formerly SPECIAL MILK PRODUCTS, Inc.

LOS ANGELES 64, CALIFORNIA • SINCE 1934

with an eye to the patient's future

To safeguard hypertensive, diabetic and certain other patients, RUCON KAPSEALS afford strategic and safe prophylaxis against capillary bleeding. The ever-present threat of vascular accident is minimized by combatting increased capillary fragility.

RUCON*
KAPSEALS*

RUCON KAPSEALS give three-fold protection to patients with increased capillary fragility associated with hypertension, diabetes mellitus, pulmonary hemorrhage, retinal hemorrhage, hereditary hemorrhagic telangiectasia, thiocyanate therapy, ascorbic acid deficiency and drug sensitivity. Rutin increases capillary strength, vitamin C maintains intercellular substance and integrity of capillary endothelium, and calcium aids the coagulation process.

Each RUCON Kapseal contains:

Rutin	100 mg.
Vitamin C (Ascorbic Acid)	100 mg.
Dicalcium Phosphate Anhydrous	400 mg.

DOSAGE: One RUCON Kapseal daily may be given initially, to be increased in accordance with therapeutic requirements. In some patients dosages of 300 mg. daily of rutin (3 RUCON Kapseals) may be required to secure adequate response. The Göthlin Petechial Index, determined prior to instituting therapy and repeated frequently during treatment, may be helpful as a guide to therapy.

RUCON Kapseals are supplied in bottles of 100.

*Trade Mark

PARKE, DAVIS & COMPANY

PRULOSE® COMPLEX

ACTIVATED MOIST BULK

The dietary approach for therapeutic correction of functional constipation

PRULOSE COMPLEX

combines the bulk-producing effect of methylcellulose with the universally accepted laxative properties of prunes, the *natural laxative food*, fortified with an satin derivative.

PRULOSE COMPLEX

activated moist bulk provides not only moisture and bulk to increase the volume and prevent dry hardness of the stool, but also provides the stimulation of gentle peristalsis necessary to institute a prompt return to normal colon function.

PRULOSE COMPLEX

tablets are:

1. small, easily swallowed
2. economical—low dosage

Each tablet contains:

Dehydrated Prune Concentrate (2 gr.)	(0.13 gm.)
Methylcellulose (6 gr.)	(0.39 gm.)
Diacetylhydroxyphenylisatin (1/65 gr.)	(0.001 gm.)

ADULT DOSAGE: 3 or more tablets with a full glass of water, twice daily, until normal elimination is established; then reduce to 3 tablets before retiring.

The HARROWER Laboratory, Inc
731 Newark Ave., Jersey City 6, N. J.

tg

281-46-2

LETTERS TO THE EDITOR

—Continued from page 34a

nasal decongestants were so widely used as sprays, jellies, ointments, etc., there seemed to be selective involvement of the vestibular branch of the eighth nerve, a possibly toxic neuritic involvement without cochlear participation, unlike the toxic quinine effects. This vestibular toxic neuritis varied in duration but was not of a permanent nature.

"A 1/200 gr. hypo atropine sulfate tablet under the tongue repeated as necessary in 15 to 30 minutes usually gave rapid relief from the dizzy attack, especially if the patient remained in a fixed position of sitting, lying, or standing.

"Over the longer term as a suppressive, tincture stramonium in increasing dosage at each meal was maintained one drop below the salivary dry point, and for the healing of the toxic neuritis most of these cases responded within 10 days to large thiamin chloride doses from 100 to 500 milligrams in tablet form 3 times daily at meals. Occasionally slight directional dizzy feelings with positional changes might be felt over a longer stretch.

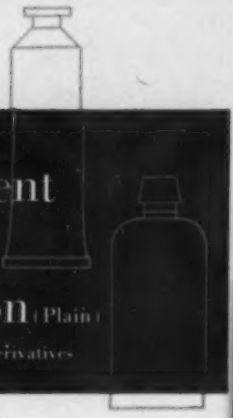
"Any nasal involvement on the affected side from acute rhinitis or chronic pathology of the nasal structures had a tendency to bring on temporary recurrences and at times additional involvement of the cochlear division of the eighth nerve.

"I brought the above to the attention of Dr. S. J. Crowe of this city in 1939 as a result of observation in the preceding 10 years, stressing 'the directional dizziness occurs subjectively toward the affected side and is always aggravated or brought on by change of position in various planes— frequently associated with nausea and vomiting and at times slight nystagmus, rarely subjective auditory involvement—it seems to be a selective involvement of the vestibular portion of the auditory nerve, pos-

—Continued on page 56a

To encourage normal healing

in
wounds
ulcers
burns
dermatoses



Chloresium Ointment and Solution (Plain)

brand of water-soluble chlorophyll derivatives

Here are typical comments from published reports on CHLORESIUM—

in decubitus ulcers . . .

"early epithelization not previously seen . . ."[1]

in dermatoses . . .

"alleviation of itching and burning . . . reduction in the erythema and edema . . . absence of oozing . . ."[2]

in wounds . . .

"tended to produce a clean granulating wound . . . effective deodorant when used on foul-smelling wounds."[3]

in burns . . .

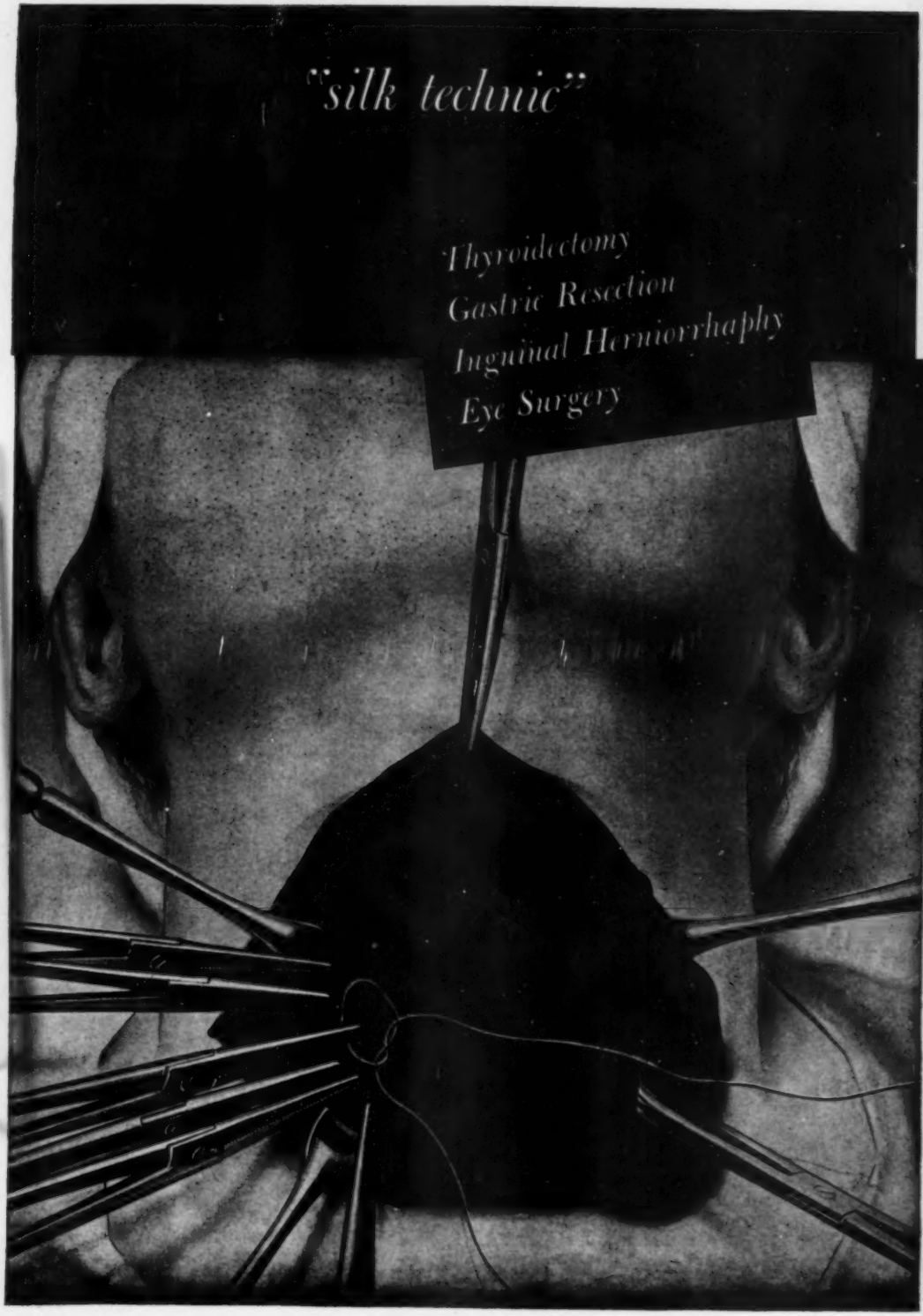
"the worst hand, treated with chlorophyll, soon looked better than the less severely burned hand . . . the chlorophyll-treated hand was more comfortable."[4]

Literature and samples on request

CHLORESIUM OINTMENT—1-ounce and 4-ounce tubes.
CHLORESIUM SOLUTION **(Plain)**—2-ounce and 8-ounce bottles.

(1) Carpenter, E. B.: Clinical Experiences with Chlorophyll Preparations, Am. J. Surg. 77:167, 1949. (2) Langley, W. D., and Morgan, W. S.: Chlorophyll in the Treatment of Dermatoses, Pennsylvania M. J. 51:44, 1947. (3) Moss, N. H.; Morrow, R. A.; Long, R. C., and Revdin, I. S.: Effectiveness of Chloresium in Wound Healing and Deodorant Effects, J.A.M.A. 140:1336 (Aug. 27) 1949. (4) Bowers, W. F.: Chlorophyll in Wound Healing and Suppurative Disease, Am. J. Surg. 73:57, 1947.

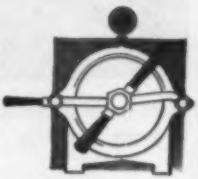
RYSTAN COMPANY, INC · Mount Vernon, New York


"silk technic"
Thyroidectomy
Gastric Resection
Inguinal Herniorrhaphy
Eye Surgery

ANACAP

5 *ways better than ever before*

1 ***Greater tensile strength:*** One of the strongest silks ever created — smaller diameter sizes can be used everywhere to minimize trauma and foreign body reaction.



2 ***Withstands repeated sterilization:*** New Anacap Silk can be boiled or autoclaved ***six separate times*** without appreciable change in either strength or texture. In laboratory tests almost the full original strength is maintained even after 23½ hours of boiling.

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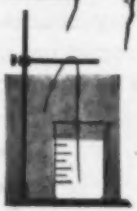

4 ***Absolute non-capillarity:*** Having no wick-like action, new Anacap Silk is resistant to body fluids and will not spread an early localized infection if it occurs.

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For All Nutritional Anemias

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A daily dose of 3 IRONATE capsules provides:	
Ferrous Sulfate, Dried	681 mg.*
Copper (as copper sulfate)	3 mg.
Vitamin B_1 (thiamine hydrochloride)	15 mg.
Vitamin B_2 (riboflavin)	6 mg.
Vitamin B_6 (pyridoxine hydrochloride)	3 mg.
Vitamin B_{12} (crystalline)	15 mcg.
Vitamin C (ascorbic acid)	225 mg.
Folic Acid	1 mg.
Calcium Pantothenate	3 mg.
Niacinamide	60 mg.
Liver, Desiccated, N.F.	525 mg.

*Approximately equivalent to 15 gr. ferrous sulfate, U.S.P. or 204 mg. of elemental iron

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supplies:
- Iron, plus
- Vitamin B Complex—in significant amount—
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- Vitamin C
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A combination of specific and adjuvant factors to assure a prompt and sustained erythropoietic response.

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IRON • VITAMINS • LIVER

SUPPLIED: Bottles of 100 capsules

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For Mild, Gradual,

Prolonged Vascular Dilatation in

Arterial Hypertension

As a valuable adjunct to rest and other accepted therapeutic measures, Erythrol Tetranitrate induces mild, gradual vascular dilatation.

Orally administered, Erythrol Tetranitrate Merck lessens the muscular tone of arteries, tending to decrease the effect of blood pressure on the arterial walls and thereby relieving the burden on the heart.

Its action in increasing the flow of blood and oxygen to the myocardium makes it useful also for prophylaxis of attacks of angina pectoris.

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Bleeding may be as easily controlled as the flow of glucose, plasma or other measures used to repair the damage of hemorrhage . . . if you use KOAGAMIN. Unlike vitamin K, useful only where prolonged prothrombin time is a factor, KOAGAMIN acts in minutes. In such cases, however, KOAGAMIN may be used in conjunction with vitamin K to achieve faster control.

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Useful in many hemorrhagic conditions, and in blood dyscrasias.

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Seldom must the surgeon resort to heroic measures to stop excessive bleeding when KOAGAMIN is employed preoperatively.

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To control secondary bleeding or severe hemorrhage, KOAGAMIN acts promptly . . . effectively.

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In 10 cc. diaphragm-stoppered vials. Literature on request.

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MODERN MEDICINALS

These brief resumes of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

Aerosporin

Manufacturer: Burroughs Wellcome & Co., Tuckahoe, N. Y.

Indications: Parenteral; Septicemia, meningitis, urinary tract and other systemic infections due to Ps. aeruginosa and some other gram-negative bacteria. For hospital use only. Oral; Bacillary dysentery, particularly the chronic type, due to Shigella and other gram-negative organisms.

Active Constituents: Polymyxin B sulfate.

How Supplied: Sterile vials containing the equivalent of 50 mg. Polymyxin B Standard (available to hospitals only), and compressed products containing the equivalent of 50 mg. Polymyxin B Standard (available to hospitals and retail pharmacists).

Armatinic Activated

Manufacturer: Armour Laboratories, Chicago 11, Ill.

Indications: Provides comprehensive antianemic therapy in microcytic anemias from pediatrics to geriatrics, and for macrocytic anemias of nutritional origin, pregnancy and sprue.

Active Constituents: Ferrous sulfate, exsiccated 200 mg., folic acid 1 mg., vitamin B_{12} crystalline 10 mcg., ascorbic acid (vitamin C) 50 mg., and insoluble liver fraction with duodenum 350 mg.

Dosage: Adults: 3 capsulettes daily. Children; in proportion to age.

Atralose

Manufacturer: Chilcott Laboratories, Morris Plains, N. J.

Indications: Spasmolysis and sedation in gastrointestinal tension states.

Active Constituents: Homatropine methylbromide 1 mg., phenobarbital 8 mg. and Cellothyl 500 mg.

Dosage: Two tablets three times daily, each dose with a full glass of water.

How Supplied: Bottles of 100 and 500 tablets.

Flaxedil

Manufacturer: Lederle Laboratories, New York 20, N. Y.

Indications: For use in surgical and nonsurgical procedures requiring muscular relaxation. Also for the prevention of accidents during shock therapy in psychiatric cases and for relaxing spastic muscles during non-operative orthopedic procedures.

Active Constituents: Tri (diethylaminoethoxy) benzene triethyliodide.

How Supplied: In multiple dose vials of 20 cc. containing 20 mg. per cc. of tri (diethylaminoethoxy) benzene triethyliodide.

Itrumil

Manufacturer: Ciba Pharm. Products, Summit, N. J.

Indications: For improved therapy of hyperthyroidism.

Active Constituents: Sodium 5-iodo-2-thiouracil.

Dosage: As indicated.

How Supplied: Scored tablets each containing 50 mg. In bottles of 100 and 1,000.

Kaophyl Capsules

Manufacturer: The Warren-Teed Products Co., Columbus 8, Ohio.

Indications: As a medicinal deodorant for local use in colostomy, ileostomy, carcinome of the cervix, and carcinoma of the rectum.

Active Constituents: Each capsule contains: Chlorophyll extract (refined), 60 mg. (1 gr.); colloidal kaolin, not less than 360 mg. (5½ grs.).

Dosage: As indicated.

How Supplied: In bottles of 30 and 500 capsules.

Tristerone

Manufacturer: Wyeth, Inc., Philadelphia 2, Pa.

Indications: Triple hormone therapy for control of uterine bleeding.

Active Constituents: An aqueous suspension of progesterone, 25 mg.; testosterone, 25 mg.; crystalline estrone, 6 mg. in each TUBEX.

Dosage: As indicated.

How Supplied: In package containing 3 TUBEX and 3 sterile needles.

—Concluded on page 52a

YOU, Doctor, are the best judge, so

BELIEVE IN YOURSELF!

With so many claims made in cigarette advertising, most doctors prefer to judge for themselves. So, Doctor, won't you make this simple test?

Take a PHILIP MORRIS—and *any* other cigarette. Then,

1. Light up either one. Take a puff—don't inhale—and s-l-o-w-l-y let the smoke come through your nose.
2. Now do exactly the same thing with the other cigarette.

Notice that PHILIP MORRIS is definitely less irritating, definitely milder.

Then, Doctor... BELIEVE IN YOURSELF!

PHILIP MORRIS

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100 Park Avenue, New York 17, N. Y.


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LICHEN TROPICUS
MILIARIA RUBRA
PRICKLY HEAT
open season for SUMMER DERMATITIS
DIAPARENE CHLORIDE DUSTING POWDER is especially indicated in dermatoses caused by irritation from perspiration, urine and feces . . . kills staphylococcus and streptococcus which produce the inflammatory reaction in MILIARIA RUBRA . . . leaves no film to interfere with metabolic or respiratory processes of the skin . . . prevents putrefactive body odors . . . does not cause granulomatous adhesions which may result in persistent sinus formation.
Better because it contains no boric acid or talc.
Diaparene® CHLORIDE
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FOR THE ADVANCEMENT OF MEDICINE THRU PIONEER RESEARCH

The First Complete Amino Acids Product For Oral Use

the Stuart Amino Acids

(SOLUBLE BEAD FORM)

COMPLETELY AND READILY SOLUBLE

BLAND, SLIGHTLY BOUILLON TASTE MEANS HIGH PATIENT ACCEPTANCE

The Stuart Amino Acids contains *all* the amino acids (and *only* amino acids) in correct ratio to maintain nitrogen balance and can be used as a supplement or the sole source of amino acids.

Complete solubility allows massive dosage. As much as 5 grams of the Stuart Amino Acids is soluble in 1 ounce of water or other liquids. 6 ounce bottle available at all pharmacies.

PHARMACEUTICALS
the Stuart Company
DEPENDABLE ETHICAL

For a demonstration of bland taste and complete solubility, write the Stuart Company, 234 East Colorado Street, Pasadena, California

3 IMPORTANT FACTORS IN THERAPEUTIC VITAMIN PRODUCTS

1 THE REPUTATION OF THE PHARMACEUTICAL COMPANY

2 THE POTENCIES

3 THE COST TO PATIENT

THE STUART THERAPEUTIC B COMPLEX, C

C ascorbic acid	150 mg.
B_1 thiamin chloride	20 mg.
B_2 riboflavin	10 mg.
B_6 pyridoxin hydrochloride	5 mg.
Niacin Amide	150 mg.
Calcium Pantothenate	10 mg.

Also other members of the B complex as present in liver fraction 2, including identified and unidentified B factors.

THE STUART THERAPEUTIC MULTIVITAMIN

A palmitate	25,000 U.S.P. units
D activated ergosterol	1,000 U.S.P. units
C ascorbic acid	150 mg.
B_1 thiamin chloride	20 mg.
B_2 riboflavin	10 mg.
Niacin Amide	150 mg.

COMPARE POTENCY AND COST TO PATIENTS WITH OTHER SIMILAR PRODUCTS

Available at all pharmacies. All Stuart products are subjected to the most rigid modern controls and assays and are sold through ethical methods only.

Another appraisal of:

'PERAZIL'®

brand

CHLORCYCLIZINE HYDROCHLORIDE

"We conclude that Perazil is a valuable therapeutic adjunct in the symptomatic treatment of allergic diseases and we found the drug to have a longer duration of effective action and less pronounced side reactions than any of the other antihistaminics currently available."

JENKINS, C. M.: J. Nat. Med. Assoc., 42:293, 1950.

INDICATIONS: Hay fever, vasomotor rhinitis, urticaria, allergic dermatitis, pollen asthma, pruritus, drug sensitivity.

DOSAGE: 50 mg. (one product) once or twice daily with water; may be increased if required in severe cases.

PREPARATION: 'PERAZIL' brand Chlorcyclizine Hydrochloride 50 mg., scored. Supplied on physician's prescription only.

BURROUGHS WELLCOME & CO. (U.S.A.) INC.
TUCKAHOE 7, N. Y.

—Concluded from page 48a

ADDITIONAL NEW PRODUCTS

Space for the full listing of the following new products, new dosage forms, change in formula, etc., is not available in this issue. Essential information is given and if the physician will keep this alphabetical arrangement with his other new medicinal listings, he will have a comprehensive file of all those new products which have not yet appeared in the various catalogs.

Benzestrol with Phenobarbital, Schieffelin & Co., New York, N. Y. New dosage form of Benzestrol for treatment of the menopause. **Dose:** As indicated. **Sup.:** In bottles of 100.

Carbo-Resin, Eli Lilly, Indianapolis 6, Indiana. Sodium removing resins. For the treatment of edema. **Dose:** As indicated. **Sup.:** In 8-Gm. packets in a prescription package of 24 and in 1 pound bottles.

Hepcovite Drops, Endo Products, Richmond Hill, N. Y. A solution of crystalline vitamin B_{12}. For promotion of child growth and development. **Dose:** As indicated. **Sup.:** In bottles of 15 cc. each with graduated dropper.

Minules (Wyeth, Philadelphia 2, Pa.) For obstetric and other patients who require a "heavy duty" hematinic iron, copper, B vitamins (including a substantial amount of B_{12}), vitamin C, and dried liver. **Dose:** As indicated. **Sup.:** In bottles of 100 capsules.

Mol-Iron Drops (White Labs., Newark 7, N. J.) For prevention of iron deficiency anemia in infants. **Dose:** As indicated. **Sup.:** In bottles of 15 cc. and 50 cc. with calibrated dropper.

Multi-Beta B_{12} Drops (White Labs., Newark 7, N. J.) For increased growth, vigor and appetite in pediatric patients. **Dose:** As indicated. **Sup.:** In bottles of 15 cc. and 50 cc. with calibrated dropper.

Pabalate-Sodium Free, A. H. Robins Co., Richmond 20, Va. A new form of the antirheumatic Pabalate. In rheumatic affections. Is recommended where conditions prevail making it desirable to restrict sodium intake or increase potassium intake, or both. **Dose:** As indicated. **Sup.:** In bottles of 100 and 500 enteric-coated tablets.

Palivite, Sherman Labs., Detroit, Michigan. For pernicious anemia. **Dose:** 1 to 5 cc. per week (divided doses) intramuscularly only, until blood picture is normal. Maintenance dose 1 cc. once, twice or four times monthly, as indicated. **Sup.:** In 10 cc. vial.

Peacock's Bromides Enteric Coated Tablets, Od Peacock Sultan Co., St. Louis 10, Mo. Sedative. In mild conditions of excitation, epilepsy and insomnia. **Dose:** Orally, for adults 1 tab. 4 times daily. Not to exceed 4 doses in 24 hours. **Sup.:** In bottles of 100.

Prozoin, Columbus Pharmacal Co., Columbus 15, Ohio. In chronic and acute, extensive and severe dermatophytosis, ringworm of the scalp, groin, hands and trunk. Kills fungi gradually without injury to the tissues. **Dose:** As indicated. **Sup.:** In 2 oz. bottles.

Sodium Sulamyd Solution 30%
Sodium Sulamyd Ophthalmic Ointment 10%, Schering Corp., Bloomfield, N. J. New names for Sodium Sulfacetimide Solution 30% and Sodium Sulfacetamide Ophthalmic Ointment 10%, resp.

Sus-Phrine, Brewer & Co., Worcester, Mass. For the relief of frequent asthmatic attacks which ordinarily require repeated injections of epinephrine 1-1000 in aqueous solution. **Dose:** As indicated. **Sup.:** In 5 cc. multiple dose, rubber capped vials.

Tolanate, C. S. C. Pharmaceuticals, New York 17, N. Y. In hypertension unrelated to organic changes in the kidneys or vessel walls. **Dose:** Average, 10 mg. 3 times daily. **Sup.:** In 10 mg. scored tabs., bottles of 100 and 1,000. Tolanate with Phenobarbital in 10 mg. scored tabs., bottles of 100 and 1,000.

Truozine Dulcet Tablets, Abbott Labs., North Chicago, Ill. For the treatment of infections caused by organisms susceptible to penicillin or sulfonamides. **Dose:** Children: 3 or 4 tabs. initially, followed by 1 or 2 tabs. every 4 hours. Adults: 4 plain tabs. initially, followed by 1 or 2 tabs. every 4 hours. **Sup.:** Dulcet tabs. with penicillin 50,000 Units, bottles of 25. Grooved tabs. with penicillin 150,000 Units, bottles of 25 and 100.

Prelude to asthma?

not necessarily...

Tedral, taken at first sign of attack, often forestalls severe symptoms.

in 15 minutes...Tedral brings symptomatic relief with a definite increase in vital capacity. Breathing becomes easier as Tedral relaxes smooth muscle, reduces tissue edema, provides mild sedation.

for 4 full hours...Tedral maintains more normal respiration for a sustained period—not just a momentary pause in the attack.

Prompt and prolonged relief with Tedral can be initiated any time, day or night, whenever needed without fear of incapacitating side effects.

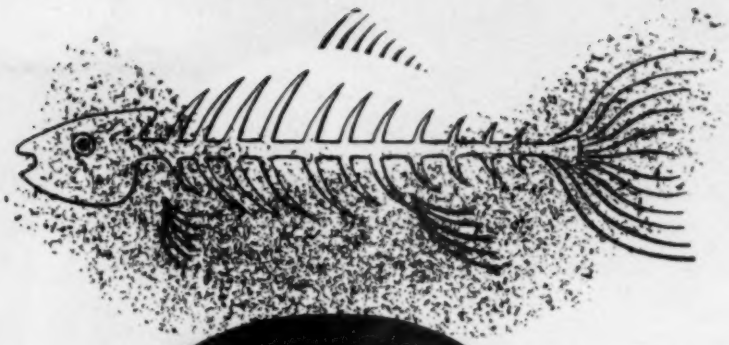
Tedral provides:

theophylline	2 gr.
ephedrine	⅜ gr.
phenobarbital	⅛ gr.

in boxes of 24, 120 and 1000 tablets

Tedral

CHILCOTT *Laboratories* DIVISION OF The Maltine Company MORRIS PLAINS, NEW JERSEY



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No fishy odor, taste or aftertaste; no allergies due to fish oils. That's the inside story of DAYALETS, the compressed multivitamin tablet with *synthetic* vitamin A...seven other synthetic vitamins...plus B_{12}.

These little tablets can't leak, won't stick together in the bottle. They're pleasantly flavored, easy to swallow, better tolerated by patients than soft gelatin capsules. One tablet daily as a supplement, two or more for therapeutic use. In bottles of 50, 100 and 500 sugar-coated tablets. Abbott

Dayalets

TRADE MARK

(Abbott's Multiple Vitamins)

Management of Spasm in Poliomyelitis

Use of Various Drugs, Especially Dihydro-beta-erythroidine, in Acute Cases

WILLIAM D. PAUL, M.D.
DONALD C. ZAVALA, M.D.
Iowa City, Iowa

The most important part of the early treatment of poliomyelitis is the attempt to overcome muscle tightness and pain. Muscles that remain tight show somewhat the same degree of atrophy that is seen in denervation.[1] In patients we have followed, the degree of atrophy was greatest in the "spastic" extremity which was kept immobilized. This so-called spasm has been shown by Magoun and Rhines[2] to be an exaggeration of the spinal stretch-reflexes. Since there are no specific antiviral drugs available at present, symptomatic treatment and methods to relieve muscle spasm are used in the early stages of poliomyelitis.[3] Adequate physical therapy is the most effective single agent that we have to date.

In recent years the effect of various drugs on muscle spasm has been investigated. Several authors reported good results with the use of large amounts of vitamin C.[4, 5, 6] This vitamin was administered intravenously in doses up to 2000 mg. to 10 of our patients and no change was noted either in tightness and pain or in the course of the disease. Bean, et al.[7], found that the pain of peripheral neuritis secondary to nutritional deficiency was relieved in a short time after vitamin B_{12} was injected. Spies[8] used vitamin B_{12} in poliomyelitis and reported that it was not effective. Vitamin B_{12} in adequate doses (15 micrograms daily) was given intramuscularly for 2 to 3 weeks to 12 patients at the University Hospitals with poliomyelitis and no effect was noted. Einarson[9] showed that Alpha-tocopherol (vitamin E) aided in transporting oxygen to the damaged motor neurones and suggested that it be used in poliomyelitis. We gave Eprolin (Alpha-tocopherol) 100 mg. every 8 hours orally to 30 patients for 4 to 8 weeks but experienced difficulty in evaluating the results of this therapy. Others have suggested the use of Pyramidon,[10, 11] insulin[12] and adrenalin[13]; however, the reports were either conflicting or the drug was used only in an occasional patient. Etamon (tetra-ethyl-ammonium chloride)[14] and Priscoline (2benzy-4,5 imidazoline hydrochloride)[15, 16, 17, 18, 19] have been used to overcome muscle spasm because of their sympathicomimetic action. We used Priscoline in doses of 50 mg. every 4 to 6 hours orally or intramuscularly in a series of 26 patients and found little or no effect on muscle tightness. This

From the Dept. of Internal Medicine (Div. of Physical Medicine), College of Medicine, State Univ. of Iowa, Iowa City.

drug may have some effect on pain and should be further investigated. Smith and Graubard, et al.,[15, 16, 19] gave procaine hydrochloride by intravenous infusions of a 0.1 per cent solution in isotonic saline to 4 cases, all of whom showed some relief of pain and spasm. The dosage was estimated using the "procaine unit": 4 mg. per Kg. of body weight. Procaine was given intravenously in similar doses to 6 of our patients and the good results described by these investigators could not be duplicated. At the present time a more extensive study of intravenous procaine is being carried out.

In a previous report by Paul and Couch[20] it was shown that curare could be used in conjunction with physical therapy to overcome muscle tightness. This effect was first reported in 1945 by Ransohoff.[21] Recently Bower, et al.,[22] gave an encouraging report on 40 patients treated with Intocostrin (curare) and physiotherapy. The dosage varied between 0.9 to 1.5 units of Intocostrin per Kg. body weight two or three times daily. Physiotherapy followed after each injection.

The use of curare in the treatment of poliomyelitis led us to study dihydro-beta-erythroidine hydrobromide which, like curare, directly blocks the efferent impulses at the myoneural junction. In 1937 the drug was isolated as a pure crystalline alkaloid by Folkers and Major[23] from the seeds of the tropical plant *Erythrina americana*. Both alpha and beta isomers were identified. The beta form was easier to obtain in a pure state and had a stronger curare-like action. Later Unna and coworkers[24] found that the hydrogenated form was six times more potent and exerted a longer therapeutic effect than beta-erythroidine. The beta form has been used in the treatment of Parkinson's disease (paralysis agitans),[26] other organic nervous disorders[26, 27, 28] and tetanus.[29] It has also been used as a substitute for curare in surgery[30] and in shock therapy, induced either electrically or by Metrazol.[31] Erythroidine has been given both intravenously and orally, the latter route being relatively innocuous. The chief side effects reported when the drug is given by mouth are nausea, vomiting and dizziness. Shapiro and Baker[25] recently studied the effects of dihydro-beta-erythroidine as an adjunct to atropine in the treatment of 24 patients having paralysis agitans. The patients received a daily dosage ranging from 100 to 300 mg. with an average of 200 mg. (50 mg. four times daily). Days of treatment extended from 7 to 455 with an average of 175 days. Toxic symptoms appeared in eleven patients but were mild and transitory. Only in one case did the medication have to be discontinued (on the seventh day) because of severe nausea and vomiting. The toxic symptoms in their series consisted primarily of gastro-intestinal disturbances (7 patients), dizziness (5 patients), blurring of vision (1 patient) and disturbance of equilibrium (1 patient).

It was decided to substitute beta-erythroidine for curare and to determine its effect on the muscle spasm and pain occurring in the early stages of poliomyelitis. The drug we had made available to us was the hydrogenated form, namely, dihydro-beta-erythroidine hydrobromide.* The name Erythroidine will be used hereinafter for dihydro-beta-erythroidine hydrobromide.

Materials and Methods The subjects selected for study were 50 patients admitted to the Isolation Unit of the University Hospitals from July 1949, through December 1949. There were 26 females and 24 males. The age and sex distribution are given in Table I. The muscle strength was evaluated and recorded in a manner recommended by the National Foundation for Infantile Paralysis. The subjects were divided according to the severity of disease and extent of muscle weakness. Group I comprises 10 patients having muscle spasm but no paralysis;

* Supplied by Merck and Company, Inc., Rahway, New Jersey.

Group II, 10 patients with muscle spasm and mild degrees of muscle paralysis; Group III, 19 patients with muscle spasm and moderate to severe paralysis; and Group IV, 10 patients with severe involvement most of whom required respirator

Table I

Age	0-9	10-19	20-29	30-39	40-49	50-59
Male	0	9	12	3	0	0
Female	1	5	11	8	0	1

care. One patient (case 50) had severe pain and paralysis but no muscle spasm. No deaths occurred in this series. Three patients with respiratory paralysis had to be placed in tank respirators. Three patients had symptoms of a severe encephalitis. Four of the women were pregnant and subsequently delivered normal infants. One female patient had myxedema and required desiccated thyroid. One male patient had two authenticated attacks of poliomyelitis, his first attack being 24 years ago.

We decided to administer Erythroidine in varying doses by mouth to determine the amount which would give the desired effect. It was found that the dose ranged between 60 and 340 mg. per day. The average oral dose for a child was 20 mg. every 6 or 8 hours, and for an adult was 60 mg. every 6 or 8 hours. The dose was varied depending upon the patient's tolerance to the drug and the clinical response. In the majority of cases Erythroidine was started between the 1st and 4th day of hospitalization. In a few, the administration of the drug was delayed because of the severity of the respiratory symptoms or the patient was unable to take anything by mouth. The medication was continued beyond the disappearance of all muscle tightness. At one time it was necessary to substitute curare until a new supply of Erythroidine arrived.

Results In Group I (no paralysis) Erythroidine was given from 3 to 10 days; the tightness was relieved in 3 to 7 days, with an average of 4.9 days. All of the patients received physical therapy in the form of exercise and stretching while a few were treated in the Hubbard tank. In none of the patients was the muscle spasm very severe. The results were universally good, the patients being able to leave the hospital by at least the 11th day.

In Group II (mild paralysis) it required an average of 7.1 days to relieve their tightness and pain. All of the patients were able to leave the hospital between the 11th and 41st days.

In Group III (moderate or severe paralysis) the patients were quite ill and, unlike the former two groups, they were unable to carry out their own exercises and stretching. It required from 4 to 34 days to relieve the tightness with an average of 13 days for the entire group. Seven of the patients were given curare during the few days when Erythroidine was not available. One patient complained of drowsiness during the first two days of Erythroidine therapy, which may have been due to the disease and not the drug. The drowsiness disappeared after the 2nd day although the drug was continued in the same dose.

The last group consisted of only the severe cases of poliomyelitis. Three of the ten patients were kept in tank respirators; one had a tracheotomy during his first week of illness. The other seven patients were febrile for a considerable time, received continuous oxygen and required chest respirators for varying lengths of time. Physical therapy was difficult in these patients. Only five of the group could be given any form of mobilization for the first 21 days. Even though physical therapy was started late, tightness was overcome in the entire group in an average of 51.6 days. The five who were given physical therapy early were relieved of their tightness and pain in 14 to 70 days, whereas in those patients who had physical therapy delayed it required 60 to 95 days before muscle tightness and pain dis-

appeared. The average length of stay in the hospital, days of treatment and time that the patients were tight are tabulated for each group and shown graphically in Figure I.

Only one patient showed any side effects from the drug. He had nausea and vomiting when he was given 300 mg. of Erythroidine per day. The dose was decreased to 240 mg. with subsidence of gastric symptoms. The nausea and vomiting reappeared only when the dose was increased above 300 mg. He still had marked tightness and, therefore, was changed to curare. His tightness and pain disappeared slowly over the subsequent 50 days. One other patient (case 50), an eight-year-old girl, had polioencephalitis upon admission and then developed a flaccid paralysis of all four extremities. She had no spasm or tightness at any time but complained of excruciating pain during passive motion. Erythroidine had no effect on the pain.

Discussion The results obtained with Erythroidine were comparable to those obtained by Paul and Couch[20] using curare and were decidedly superior to hot packs. The curare patients who had muscle tightness but no paralysis were relieved of muscle spasm in an average of 4.4 days, whereas the patients in the Erythroidine series (Group I) were relieved in an average of 4.9 days. In the curare series the patients who had both muscle spasm and paralysis were relieved on an average of 12.0 days, while a similar group of patients who received Erythroidine (Group III) required 13.0 days. Patients who were less severely involved (Group II) required only 7.1 days to overcome the muscle spasm with physical therapy plus Erythroidine. In the curare series the individuals who received only hot packs and stretching required an average of 46.7 days to alleviate the spasm. Roth[32] using the Kenny technique found that it required an average of 42 days before the spasm and pain were relieved. In the Erythroidine series the patients who had severe involvement (Group IV) required an average of 51.6 days before the spasm and pain were relieved; this is almost the same time that it took to obtain a similar effect in the milder forms of poliomyelitis treated with hot packs.

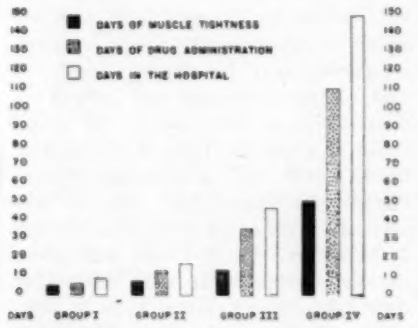

Figure 1. Compares the number of days of tightness, days of treatment and length of time in hospitals for the four groups of patients.

Erythroidine, because it can be given by mouth, is a simple adjunct to physical therapy. It is economical, time saving and easy on the patient. Its side effects are practically nil. In our series Erythroidine had no immediate effect on anoxia, hypercapnia, respiratory paralysis or difficulty in swallowing; these symptoms regressed as the disease improved. Ten patients had physical therapy delayed for several days and, although they were given Erythroidine, no improvement was noted until mobilization was started. Erythroidine had no direct effect upon pain which the patient experienced when the extremity was stretched. As the muscle tightness was relieved the pain decreased in severity, and the extremity could then be taken through a greater range of motion. There were a few patients who had extremely painful muscles with little or no tightness and one who had flail limbs with extreme pain. Neither curare nor Erythroidine had any effect on this type of pain; analgesics had only partial effect.

The basis for the pain is not clearly understood. There is some indication by other authors that Priscoline may be of some benefit in reducing the pain; however, our results have been inconclusive to date.

Summary and Conclusions

Early mobilization of tight and painful muscles is the most important single factor in managing acute anterior poliomyelitis. The tightness and pain may be overcome by the judicious use of exercise and stretching. The attempt to help relieve muscle spasm by the use of various drugs such as vitamins C, B_{12} and E, Etamon, Priscoline and procaine has met with varied success in the hands of different investigators. Our results using these same drugs have been poor. Encouraging reports regarding the use of curare as an adjunct to physical therapy led us to study dihydro-beta-erythroidine hydrobromide (Erythroidine) which, like curare, blocks the efferent impulses at the myoneural junction. Erythroidine by mouth is of low toxicity and has been given over extended periods of time without apparent harmful effects. A method of treatment has been outlined which is simple, time saving and economical. It entails primarily physical therapy, using Erythroidine as an adjunct to overcome muscle tightness. Fifty subjects with proven acute anterior poliomyebtis were given dihydro-beta-erythroidine hydrobromide orally in doses of 20 mg. (children) and 60 mg. (adults) every 6 to 8 hours. The results obtained were comparable to those with curare and superior to hot packs. Pain without tightness was not relieved by Erythroidine. Patients kept immobilized remained tight even though they were given drug therapy.

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Asthma

This summarization attempts to cover the essential therapeutic information on the subject and is designed as a time-saving refresher for the busy practitioner.

Part II

Treatment Goals The patient applies for relief from the acute attack. Unless he has had previous, personal or vicarious experience to enable him to realize the fundamentally recurrent nature of asthma, the patient may have to be sold on the idea of treatment for the purpose of preventing future attacks.

In the following pages, treatment is discussed under various subheadings as follows: (1) acute episodes (2) environmental control (3) constitutional control (4) reduction of hypersensitivity (5) status asthmaticus.

Acute Episodes Strive to achieve symptomatic relief. Until palliation is achieved, no attention need be given to the cause of the acute episode. Rare exceptions to this rule are easily imagined. Just as soon as possible, following relief of symptoms, investigation is properly undertaken in quest of the trigger factor responsible for the symptoms. The list of useful medications is too long to permit discussion of all. Only a specialist in allergic diseases will require more than the variety herein discussed.

Numerous "patent" medicines for asthma are available to the patient without prescription. It is well to become familiar with the ones your patients are using. Regardless what medication is tried (on his own initiative or on your prescription), a strong psychic stimulus is obtained from almost every new form of therapy. Realizing this, you will not permit yourself undue enthusiasm on the basis of subjective evaluation of relief. Unless you are familiar with his non-prescription medicines, you may prescribe essentially the same remedy as he has been using at home. The proper test of effective therapy is relief of dyspnea and wheezing with objective evidence of improved vital capacity.

Belladonna alkaloids are incorporated in various combinations in "patent" medicines available to the public. The burning of stramonium leaves mixed with anise and nitrite is a familiar remedy, disguised in various forms and appearing as asthma powders or cigarets. Occasionally patients respond very well to stramonium or atropine or other belladonna alkaloid. Ordinarily the results are mediocre or unsatisfactory.

Epinephrine is still the leading pharmacologic tool in asthma. It is an antihistaminic and the most powerful one. Adult dosage is 0.2 to 0.5 cc. of 1:1000 solution at 10 to 20 minute intervals until relief is achieved. Children may have half the adult dose, repeated at 20 to 30 minute intervals. Subcutaneous administration is preferable to intramuscular, chiefly because absorption is a little slower, thus reducing undesirable side-effects. Subcutaneous injection also reduces the danger of direct intravascular injection. Undesirable effects include: headaches, increased cardiovascular activity, fear, restlessness, palpitation, dizziness, tremor

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and even cardiac infarction in arteriosclerosis. There is really no justification for intravenous use. Response to subcutaneous dosage is prompt and of longer duration. Ampules of 1:1000 usually contain 1 cc. Physicians tend to accept 1 cc. as the standard adult dose. Your patients will have fewer side effects and adequate relief with one-half to one-third of an ampul. They will sleep better following relief of a nocturnal attack if the smaller dose is given.

Another unfortunate tendency is the excessive use of epinephrine in oil. This may be justified therapy when a doctor has been called out frequently at night to relieve recurring attacks of nocturnal asthma. The absorption of epinephrine from this mixture in oil is variable and unpredictable in different patients. Prolonged stimulation by epinephrine is undesirable. The initial action is sought: constriction of blood vessels and relaxation of bronchial spasm. Reserve the long-acting preparations (gelatine and wax-base products are also available) for patients with whose reactions you are familiar and for whom large doses may be required. Enteric coated medications (discussed later) are more suitable for relief designed to be effective over a period of many hours.

Familiarity with the effects of overdosage of epinephrine is valuable. Möller saved the life of a 12 year old girl to whom an overdose was accidentally administered. One could mistakenly administer 1:100 (ordinarily used in atomizer therapy) instead of 1:1000. Möller's juvenile patient received a dose which is believed to be twice the lethal dose for an adult man. Prompt, persistent nitrite therapy enabled the girl to survive. Amyl nitrite by inhalation and nitroglycerine under the tongue are useful and commonly available. Application of a tourniquet to the arm above the injection site may prevent further exacerbation of the reaction. A large dose of epinephrine may produce cerebral hemorrage from sharp rise in blood pressure. Cardiac irregularities (including ventricular fibrillation) are produced. Anginal pain arises from the increased work of the heart following epinephrine stimulation. Hyperthyroid individuals are especially susceptible to the pressor effect of epinephrine. Psychoneurotic symptoms are often exaggerated even by small doses of epinephrine.

By means of an all-glass nebulizer, 1:100 epinephrine may be inhaled as a fine spray. Special inhalation masks for use with a motor-driven nebulizer pump are obtainable and specially useful for children. Satisfactory results with inhalation therapy depend upon careful regard for technical details. A truly mistlike spray of high density is desired. Dosage is an individual matter. Dryness and irritation of the trachea and bronchi develop from over-enthusiastic usage. Epigastric pain follows if the drug is swallowed. It is preventable by routinely rinsing the mouth with water after each inhalation. A frightened patient may report that he spits blood since commencing his inhalation therapy. He may, of course, be spitting blood and his complaint should be investigated. More likely, he is seeing the red color of epinephrine which develops in its reaction with mucus. Ordinarily inhalations are used hourly. Side-effects of epinephrine are minimal but nasal congestion is a frequent after-effect.

Sometimes even large doses of epinephrine fail to produce relief in a patient who usually responds well to average dosage. That situation is called epinephrine-fastness. Animal experiments indicate that bronchial musculature may actually constrict spasmodically after initial, epinephrine-produced relaxation. A long inhibitory effect, following the excitatory phase of its activity, characterizes the pharmacodynamic result of epinephrine administration — particularly when administration is prolonged. This inhibitory effect is the origin of epinephrine fast-

ness. Substitute therapy is necessary during this inhibitory phase.

Ephedrine is a useful drug for oral therapy. It provides prolonged action after the most acute phase of the attack has passed. Its good and bad effects are similar to epinephrine. In addition, acute gastric upset and urinary retention may occur. The latter is a problem to be avoided in men with enlarged prostates. In routine use, ephedrine is combined with barbiturates or other sedatives. Otherwise its stimulative effect on the nervous system is disturbing. Enteric coated tablets, combining ephedrine, aminophylline and a barbiturate, are designed for bedtime medication. The coating disintegrates in 4 to 6 hours, releasing the medicines to prevent or overcome the expected nocturnal disturbance.

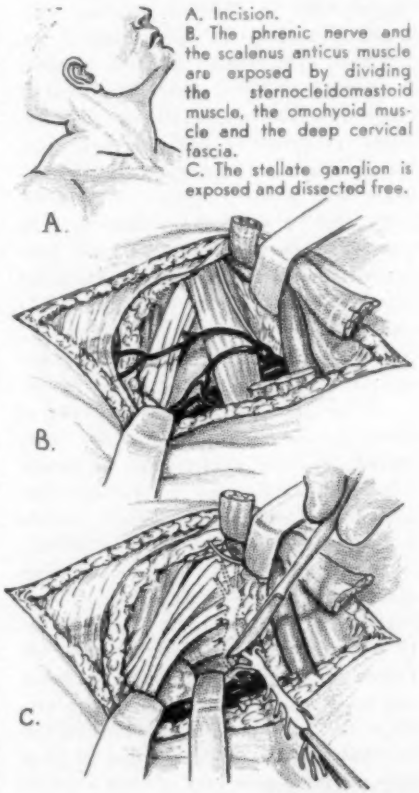
Aminophylline is credited with potentiating the therapeutic activity of ephedrine when the drugs are administered together. It is useful alone. In epinephrine-fastness, aminophylline is often the drug of choice. Very slow intravenous injection is advocated. The use of a 25 to 28 gauge needle assures injection slowly enough to avoid undesirable reactions of nausea and dizziness. Serious danger does not attend the intravenous use of aminophylline in asthma unless there be complicating cardiac disease. A proper dose is 0.24 to 0.48 gm for adults and 1/20 grain per pound for children. Dosage may be repeated every 4 to 6 hours. Rectal administration, as a suppository or as a half gram dose dissolved in 2 ounces of tap water retention enema, is moderately effective.

Intravenous aminophylline may be given by slow drip, putting 0.5 to 1.0 gm. in a liter of saline or isotonic glucose. Aerosolization of aminophylline is a new method[37].

Expectorants are valuable. Bronchial obstruction (hence wheezing and dyspnea) may be relieved by clearing the bronchi of mucous plugs. Medication which will thin the bronchial secretions may help to clear out the mucus. Iodides are excreted in the bronchi in high concentration. The precise mode of action is unknown. Dosage of 10 grains 3 to 5 times daily, after eating, is satisfactory. Gastric irritation may occur but enteric tablets are available. Other complications are diarrhea, coryza, acneform eruption and painful swelling of salivary glands. Ipecac is valuable. In children, an emetic dose will produce clearing of the bronchial tree simultaneously with vomiting[19].

Isuprel is a better broncho-dilator than epinephrine but is less efficient in reducing bronchial edema. Undesirable pressor effects and tachycardia do not develop with

Fig. 1. Stellate ganglionectomy. (after Linden)



A. Incision.
B. The phrenic nerve and the scalenus anticus muscle are exposed by dividing the sternocleidomastoid muscle, the omohyoid muscle and the deep cervical fascia.
C. The stellate ganglion is exposed and dissected free.

isuprel as they do with epinephrine. Dosage is 0.1 to 0.5 cc. of 1:1000 aqueous solution subcutaneously. It may be administered by inhalation as 1:200 dilution. It is effective in epinephrine-fast patients and there is no evidence of the development of isuprel-fastness. Cohen and Van Bergen recommend isuprel for control of bronchial musculature in asthmatic patients during general anesthesia.[13]

Certain suitable antihistaminics are particularly effective in mild asthmatics as a bedtime medication, thanks to their sedative effect. Epinephrine tends to increase anxiety. These drugs tend to relieve anxiety. One disadvantage is an atropine-like tendency to dry up bronchial secretions. This[19] is common to the whole group of antihistaminic drugs. Consequently a patient might suffer increased difficulty in coughing up mucous plugs after antihistaminic therapy.

Environmental Control Just as soon as the acute symptoms yield to your therapeutic attack, it is well to commence your sleuthing. Find and remove the TRIGGER allergen from the patient's environment. As you know, it may be anything from an emotional upset to a dish of olives or a whiff of pollen-laden air. Its removal is simple if it proves to be a feather pillow or mattress. Foam or sponge rubber pillows and mattresses are satisfactory substitutes. Dust-proof pillow and mattress covers are practical.

Sofa pillows and the stuffing in overstuffed furniture must not be overlooked. Upholstery and rug dyes produce sensitivities at times. Padding beneath the carpet will fail to attract your attention unless you know that it may contain hairs of cows, horses or rabbits and jute. It is easier to recommend and insist upon ridding the home of pets than it is to desensitize a patient who is in constant, daily contact with animal emanations from which his asthmatic symptoms arise. Pollinating house plants (relatives of the daisy, aster, wormwood, dandelion and ragweed) should be thrown out bodily. Inquire about furs and fur coats. Cosmetics demand your tactful attention, especially if the sufferer is the only man in a houseful of women. Orris-free cosmetics are hypo-allergenic and are a worthwhile substitute because effective desensitization to orris root is difficult to attain.

House dust is an omnipresent problem. If house dust is the trigger mechanism, desensitization is the only practical solution unless your patient is a wealthy individual. A wealthy person could afford to maintain a dust-free apartment with filtered air. It must be free of dust-producing articles such as drapes, overstuffed furniture, rugs and stored materials, including books. Furniture, walls, floor and ceiling must permit daily scrubbing to eliminate dust accumulations.

A good housewife with a vacuum cleaner can do much to reduce dust accumulation. Removal of dust-producers and dust-accumulators throughout the home is helpful. "Dust-seal" is the trade name of an oily substance designed for application to fabrics and rugs. It seals the fabric against dust production.

Industrial medicine takes cognizance of the worker with the asthmatic diathesis. History of allergy contraindicates employment in contact with feathers, fur, insecticide, chemical fumes, grain dusts and so on. Book dust contains molds which grow on the bindings. Librarians may develop allergic sensitivity to such molds from the books among which they work. Growth of mold can be prevented by wiping the books with a solution of thymol, mercury bichloride, ether and benzene[14]. Bakers develop symptoms from prolonged contact with flour. Apparently flour is not a simple substance but rather a complex containing such impurities as ground up caddis fly, house fly, beetles, rusts and smuts. Allergic sensitivity may develop to any of the impurities as well as to the grain. Ten years is the average period of contact

before clinical symptoms appear. Optimum ventilation prolongs the average symptom-free period of employment in contact with flour. Baking firms avoid hiring people with personal or family history of allergy, particularly asthma. Affected bakers may safely find employment in confectionery work where exposure is greatly reduced but their acquired skills are not entirely wasted. Hyposensitization is almost never effective in eradicating symptoms in bakers, unless exposure is markedly reduced. The industrial physician who wishes to recognize incipient or preclinical sensitivity should do periodic studies of bronchial and nasal secretions for eosinophiles.

Constitutional Control The obvious importance of general health measures, in building up the severe asthmatic so he may better withstand his exhausing attacks, must not be overlooked during intervals between attacks. Even the mild asthmatic deserves a complete physical examination and diagnostic survey. Asthma is a disease of insidious, intricate psychic and somatic interrelationships. The correction of apparently minor, seemingly unrelated physical deficiencies may increase the patient's ability to withstand allergenic stimuli. In this connection, it is interesting to consider reports in which specific benefit is claimed in relief of asthma by vitamins[26], endocrines[27], injections of insulin[17], tuberculin[3] and so on.

Specific measures of general importance may be considered. Accidents of such nature as to require prophylaxis against tetanous will befall astimatics as well as normal persons. Asthmatics who demonstrate sensitivity to horse serum should therefore be given active immunization with tetanus toxoid, to avoid the necessity for antitoxin. Smoking tobacco was once considered an excellent remedy for asthma. The patient may claim that it helps him when he smokes and irritates him to breathe smoke from cigarets smoked by others. Such a patient should be advised to quit smoking. Alcohol usually aggravates allergic conditions but it may produce temporary benefit in asthma and lead to addiction.

Adequate nourishment with proper mineral and vitamin intake is important. When food sensitivities appear to be important in the production of symptoms, it may be well to make a fresh, scientific start in diet prescription by the use of an elimination diet[43]. To the basic, non-allergenic foods with which the diet starts, selected additions are made at regular intervals. The effect of each new addition is studied. If it produces no symptoms, it is permitted to become a part of the regular diet. By such testing, suspected foods are definitely identified as allergenic or non-allergenic. Foods which are sometimes suspected as being allergenic actually produce symptoms as a result of overloading of the stomach rather than allergic sensitivity. Psychogenic factors play a large part in confusion about supposed food sensitivities.

Outdoor exercise is not contraindicated and should be encouraged. Travel is of value for mental and physical stimulation. Southern Arizona offers a dry, warm climate without extreme diurnal temperature changes and is favorable for asthmatics. Various areas of the country are well-known for low pollen counts and serve therefore as refuges for pollen-sensitive asthmatics. An itinerary should avoid areas with high pollen counts if pollens are a factor in production of symptoms. Travel by airplane is ordinarily contraindicated. High altitude travel of any kind, with decreased oxygen tension, may transform subclinical asthma to actively symptomatic asthma. Rest from an occupation which imposes considerable nervous strain, avoidance of excessive fatigue and discovery of means of achieving relaxation are more important than a prolonged vacation.

Reduction of Hypersensitivity The discovery of the substance or substances responsible for the acute attack is

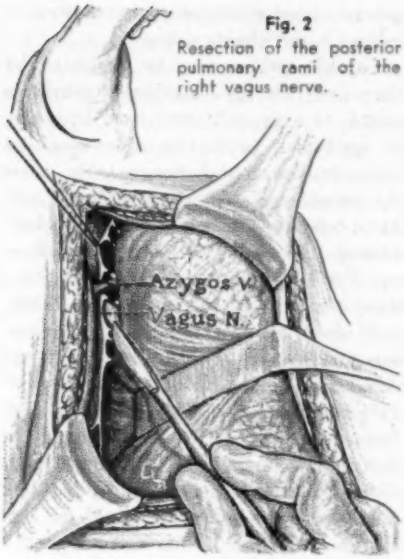


Fig. 2
Resection of the posterior pulmonary rami of the right vagus nerve.

a fundamental responsibility of the physician who accepts the asthmatic for treatment. You should assume that the patient is sensitive to something. Rackemann[30] writes about intrinsic asthma. There are patients for whom no sensitivities are found. It is extremely important to find sensitivities when they do exist. Unger et al.[54] treated one patient for a long time. Because they had tried and tried in vain to demonstrate any sensitivity, they had classified this patient as an example of intrinsic asthma. Eventually they tested him for sensitivity to karaya gum and he proved to be markedly sensitive. Karaya gum was found in the adhesive which held his dentures in place.

Once the important sensitivities have been identified, the physician must decide which ones to handle by environmental control and which ones by desensitization. Environmental control is the better method when practical. Desensitization is expensive, tedious and frequently disappointing. Desensitization is always dangerous. Reactions are unpredictable and may be serious. Technical details of administration must be adhered to with care[24,2,33,18,21,38]. Injections should be distal so as to permit application of a tourniquet above the injection site, in case of reaction following administration. All injections should be subcutaneous, not intramuscular. The same quantity of antigen will effect the desired result with increased safety if diluted liberally. The larger volume insures slower absorption. Always have 1:000 epinephine at hand, together with a sterile syringe and needle. These precautions are not always carried out by the nurse to whom "routine shots" are delegated. Remember that you are legally responsible for any reactions, even when your office girl administers the dose.

Oral medication is helpful in alleviating symptoms of reaction to desensitization injections. Such medication should be carried by the patient — on his person — throughout the day on which he receives a "shot". Reactions sometimes commence as long as 3 or 4 hours afterwards. Capsules containing ephedrine, aminophylline and a barbiturate are useful. If the reaction occurs while the patient is still in the office, 0.1 to 0.5 cc. of 1:1000 epinephrine subcutaneously or intramuscularly may be employed. Oral ephedrine alone is sometimes sufficient and rapid enough in its action. The application of a tourniquet proximal to the site of injection may reduce systemic distribution of the antigen. Intravenous or intramuscular benadryl, thanks to its sedative effect, plus the antihistaminic value in countering a reaction, may be the drug of choice when the patient is high-strung. Whereas epinephrine and ephedrine excite, benadryl sedates.

Your choice of substances for which you plan a desensitization campaign should depend not alone on the intensity of skin reactions, but very largely upon the history too. Treatment is usually necessary in sensitivity to certain almost unavoidable inhalents. These include house dust, orris root, fungi, pollens and industrial inhalents to which the patient is exposed occu-

pationally. Your observations on how the patient reacts to his first series of shots is so important that you should keep detailed notes as a guide for the subsequent series. In pollen-sensitive patients, for example, seasonal or pre-seasonal courses of injections are usually needed for at least several years. If your notes show that all shots, even large doses, were well tolerated, it may be wise, safe and economical to commerce the next series with larger initial dosage. In that way, effective treatment will be hastened with a shorter course of injections.

Chronic Asthma If the symptom-free intervals between attacks are of long duration, the incapacity suffered by the patient is not great. It is possible to have asthma from childhood to old age and to suffer little incapacity. That would be chronic asthma of a benign sort and treatment would not differ from the ordinary treatment for acute asthma. Chronic asthma is ordinarily not benign but implies increasing incapacity. Free intervals grow shorter. Complications increase. Dyspnea becomes evident between attacks. In severe, chronic asthma, the patient may be bedridden.

New concepts of treatment are being developed to provide some relief for severe, chronic asthmatics.

Chronic, intractable asthma has been successfully treated by surgery. Blades[6] and Abbott et al.[1] report operations aimed at autonomic denervation of the bronchi, with favorable end results. Abbott and associates[1] report 18 cases with plexectomy or vagotomy with 8 classified as fair or good results and only 1 considered cured. Another series of 13 patients had autonomic surgery plus resection of "trigger areas" of the lungs. They report, among these, 7 cures and the other 6 either fair or good results. The "trigger areas" are localized areas of pulmonary destruction which, in the authors' experience as thoracic surgeons, they have found to be very commonly present in asthmatics. The precise causal relationship of such areas to asthma is not clearly defined.

Chronic asthma may be benefitted by deep x-ray therapy. MacInnis[33] attributes benefit to a general effect from liberation of antibodies, production of eosinophiles and circulation of hormones. He treats the sinuses and mediastimum. Relief may be of 6 months' duration. Vallery-Radot[37] treated 1000 cases, 680 with good follow-up. Perfect results were achieved in 23%; good results in 18%. At the Mayo Clinic, only severe asthmatics, intractable to conservative therapy, are treated by x-ray. Analysis of results in 100 patients shows[31] 11% complete relief, 53% good, 21% fair. Improvement occurs in 1-2 days and the best results are in those who need it most —asthmatics with disease of long duration. Side effects are minimal and of no consequence. Dosage is with 130 KV with 5 mm. aluminum, 16x16 ports centered over the sternum anteriorly and posteriorly, giving 256 r (air) on 2 consecutive days. It is low dosage. Higher dosage, as tried at Mayo, has proven less beneficial. Hull, Balyeat & Chont[36], employing higher dosage, reported 39% excellent and 40% good results. None of the radiologists ventures a decisive explanation for the benefit obtained. Leddy[36] writes: "I cannot explain . . . the benefit obtained . . ." Polizzotto[35] attributes good results to normalization of the tonus of the vegetative nervous system. He irradiates the cervical and thoracic sympathetic ganglia, pituitary, spleen, liver, throid and lungs.

Schwartz[47] and others report relief of symptoms following the administration of oral cortisone acetate. Three patients whose symptoms had been continuous for 2 to 6 months were relieved within 12 hours of the onset of therapy.

Carey and his associates at Johns Hopkins[9] tested the beneficial effect of cortisone as well as ACTH Undoubted benefit was obtained with cortisone. More definite, dramatic and satisfactory response was obtained with ACTH. in 23 patients

who had had constant asthma for at least 2 months. The majority of these obtained complete remissions of all signs and symptoms for periods up to 10 months. The total amount of ACTH employed for initial treatment varied from 190 to 1249 mg. over 4 to 21 days of therapy. The average dosage was 423 mg. in 11.6 days. Rose et al.[42] treated six cases of severe, intractable asthma with ACTH. Four patients had complete remission of all symptoms, within 48 hours. Objective tests of vital capacity verify the subjective reports of well-being. Randolph and Rollins[40] treated 11 asthmatics who "represented the most difficult diagnostic and therapeutic problems gleaned from a private practice of allergy". Ten obtained a marked degree of relief from a short course of ACTH. Duration of relief varied from 1 week to 5 months. Dosage ranged from 125 to 325 mg. The more extensive the pulmonary emphysema, the less satisfactory the relief from ACTH. These authors emphasize that short-term treatment appears to be free of the dangers observed in long-term ACTH therapy. They observed no deleterious effects of their treatment of these patients.

Following ACTH, chronic asthmatics appear to be less sensitive to substances to which they have recognized hypersensitivity. In addition, when their symptoms return, they respond more readily to ordinary symptomatic remedies. Equally satisfactory remissions are obtainable in repeated courses of ACTH, as necessary. No increase in amount of the drug or duration of dosage is required in repeat courses. Up to six courses have been given, with good effect each time. The Johns Hopkins group considers[52] optimal dosage to be 500 to 800 mg. given in a period of 10 to 15 days. Approximately 2 months' freedom from symptoms can be expected with such dosage, according to their experience with 54 patients. Both aqueous and long-acting forms of ACTH are now available. The long-acting form decreases the number of injections which are necessary for relief in asthma.

Segal and Herschfus warn that repeated courses of ACTH may produce serious, yet unrecognized alterations. "Rebound swings" in hypo-adaptation may occur after ACTH therapy for asthma. They[50] advise continued caution in the use of this powerful agent. In another article[49] they remark that ACTH offers remissions more consistently than any other therapeutic agent for asthma.

Status Asthmaticus Therapy

When an attack of asthma is extremely severe or prolonged or resistant to therapeutic measures which ordinarily provide relief, the patient is said to be in STATUS ASTHMATICUS. Unexplained recovery may occur—even without treatment. Death may occur, from exhaustion, asphyxiation, dehydration or cardiac failure. Complications such as massive atelectasis, pneumonia and mediastinal emphysema may occur.

Hospitalization is always advisable. We no longer take patients to the hospital only when successful treatment outside the hospital is impossible. The family asks: "Is it necessary?" Well, hospitalization offers trained personnel, equipment and drugs which are not easily provided in the home, an atmosphere which usually is freer of dust and—sometimes most important—relief from intimate contact with anxious relatives. You may honestly answer that it is important. Relief is usually more rapidly obtained. The fear of death, which haunts some asthmatics during a long-continued, exhausting struggle for breath, is allayed by the scientific surroundings of the hospital. A cheerful, reassuring nurse can be invaluable.

A wealthy patient must not be permitted to receive luxury during his admission for status asthmaticus. There is a tendency on the part of doctors to delegate the assignment of rooms entirely to the hospital administration. Many hospitals have a few expensive suites with wall-to-wall carpeting, expensive drapes and overstuffed fur-

niture. The asthmatic, regardless of wealth, needs a plain, dust-free room, with air-conditioning and filtration if available. The physician is well advised to inspect the arrangements carefully on each visit. Look for his wife's fur coat in the closet or her compact on the dresser. Get the spare blankets out of the drawer and banish them from the room. Prohibit the maid from pushing a dust-laden floor broom around his quarters. Exacerbation of his symptoms during the visit of the maid may be enough to send his nurse scurrying to the telephone to call you. The nurse may fail to note any relationship between the arrival of the dust-scattering maid and the worsening of symptoms in your patient. The very eagerness of the hospital administration and the housekeeping staff to please the wealthy patient may be a genuine handicap to you in your treatment.

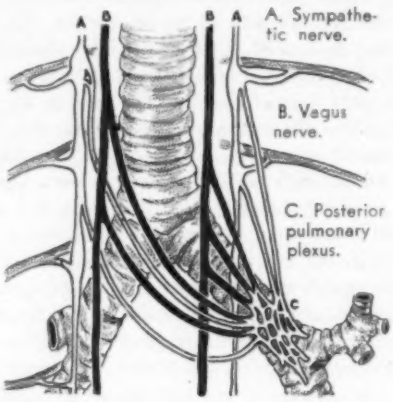
Rest, Fluids and Nourishment are the greatest needs of the patient with status asthmaticus. Rest should not be sought with the aid of morphine. It is absolutely contraindicated. Morphine is too apt to produce permanent rest. Demoral (meperidon) for analgesia and bronchodilatation is acceptable but one cannot be certain that its respiratory depressant effects may not outweigh its spasmolytic value. Demoral is not advised for the further reason that it is habit-forming. These two powerful drugs should be replaced by less dramatic, safer agents with more predictable activity. Sedation is discussed in a later paragraph.

Most patients in status asthmaticus are also in a state of epinephrine-fastness. Some of the symptoms are identical with (and due to) toxicity from epinephrine and epinephrine- or ephedrine-like drugs. All sympathomimetic drugs should be regarded with suspicion. Isuprel is reported as being effective in the epinephrine-fast patient, however. Doses of ordinary epinephrine should be outlawed for at least two days, to permit recovery from fastness.

To thin out bronchial secretions, promote expectoration, replace body fluids lost during a prolonged attack and to supply calories in the form of available glucose, intravenous dextrose and dextrose in saline should be administered. The amount of intravenous fluid to give depends upon well-known personal factors. Initially one liter of 5% glucose in saline is advisable. Some favorable results are reported from initial introduction of 50% glucose intravenously. Presumably the hypertonic solution removes fluid from edematous bronchial mucosa. Actually, some men consider the salutatory effect to be a specific, pharmacologic effect of glucose. The simultaneous use of aminophylline and glucose (5 or 50%) is reported to enhance the action of each. One half gram of aminophylline may be added to each liter of saline or isotonic glucose used for rehydration.

A very sound objection can be raised against intravenous therapy. Thereby, discomfort is added to a patient who is already suffering. If the use of phleboclysis were not so very well justified, to restore body fluids, to provide nourishment and salts, and to assist in alleviating symptoms, this objection would be invariably sustained. Sedation may enable you to main-

Fig. 3. Anatomical basis for left side parasympathetic denervation and destruction of pulmonary plexus. (after Jacobs)



tain phleboclysis without overburdening the suffering patient. Hypodermoclysis may prove to be more practical either with or without sedation.

Sedation with chloral hydrate, bromides or barbiturates is vastly preferable to the use of narcotics. Rectal administration of ether mixed with olive oil and instilled with a rubber catheter will produce relaxation and sleep. Three ounces per 150 pounds is sufficient to permit administration of intravenous fluids for a period of two or three hours.

Hyaluronidase (®Alidase, Searle) products have facilitated subcutaneous administration of fluids. Large quantities of isotonic fluids for rehydration of the patient in status asthmaticus can be rapidly and safely introduced without pain, by hypodermoclysis. One ampul (500 viscosity units) of hyaluronidase injected into the area used for absorption of the subcutaneous fluid is the usual dose. Sometimes the hyaluronidase is injected into the rubber tubing near the needle, shortly after the fluids are started. Occasionally a patient demonstrates sensitivity to hyaluronidase. The allergic asthmatic should therefore always be skin tested for the preparation used, before its administration. Intradermal injection of 1/10 cc. or less will provide a satisfactory test for sensitivity in 5 minutes.

Oxygen therapy has been over-emphasized in status asthmaticus. The proper indication is cyanosis. In the absence of cyanosis, the paraphernalia of oxygen administration merely adds to the patient's discomfort and conviction that he is desperately ill. A mixture of 20% oxygen and 80% helium is reported to save 50% of the respiratory effort required for breathing.

ACTH is indicated as a life-saving measure in status asthmaticus when customary measures fail. Before considering the use of ACTH, all customary measures should be tried. Besides those already discussed, additional measures are available. If cough is non-productive and there is evidence to suggest bronchial plugging (roentgenograms are helpful), bronchoscopy for removal of mucus plugs may be indicated. In the presence of emphysema, manual elevation of the diaphragm is occasionally capable of effecting some temporary reduction in respiratory distress. Expectorants should not be neglected. Antihistaminics[19] are of "little or no value in this condition". Overtreatment consists of going too far beyond the essentials of rest, fluid and nourishment, being too impatient for results and therefore contributing to the patient's exhaustion by therapy itself. Antibiotics have a definite place, have often proven to be a deciding factor and must not be neglected.

When ACTH is to be employed, dosage is begun with 25 mg. 4 x daily for 2 to 3 days. Thereafter 20, 15 and 5 mg. doses are successively given 4 x daily for 2 days each. Symptomatic improvement can be expected within 4 hours of the first dose, but it may be delayed as long as 36 hours. Complete freedom from symptoms may occur in from 1 to 8 days. A resistance to hypersensitivity is temporarily established. This enables the physician to reduce or entirely discontinue symptomatic therapy. Marked emphysema, psychotic personality, severe hypertension, Cushing's syndrome, congestive heart failure, chronic nephritis and severe diabetes mellitus are listed as contraindications to ACTH therapy. Such contraindications have little meaning when you have chosen ACTH only as a last resort or a life-saving measure in status asthmaticus.

Prognosis If by prognosis we mean the outlook for living out a normal life span, it is clear that asthmatics are not a good insurance risk. They die of the pulmonary complications of asthma. Those who are overweight die at 150 per cent of the standard rate for their age. Those underweight die at 200 per cent of the standard rate. Deaths from pneumonia are particularly frequent in those who have

emphysema or chronic bronchitis. These statements are based upon experience, much of which antedates antibiotic therapy. Of course the outlook is brighter now.

If by prognosis we mean the outlook for complete remission of asthmatic attacks, the analyses of some experts may be consulted. Rowe, Rackemann, Witts and Unger have all reported on series of patients whom they have treated. Their studies show "improvement or cure" of from 70 to 90 per cent. About half their patients could expect further attacks of asthma. For a really satisfactory statistical prognosis, one would have to follow a large group for several decades after the completion of the ordinary course of therapy. With each passing decade, however, rapid forward strides have been made.

The treatment of asthma is not ordinarily expected to produce permanent cure. We postulate a constitutional predisposition which it is beyond our present powers to correct. Successful therapy reaches beyond the alleviation of the acute attack, however. It is our responsibility to prevent symptoms by instructing the patient in the recognition and avoidance of his sensitivities. Further help is obtained by desensitization through multiple injections. The prognosis depends upon how thoroughly we do this job and how well the patient cooperates. The thoroughness with which the physician investigates the case is perhaps the most important prognostic factor.

Thorough study may reveal important emotional conflicts which tie in directly with the patient's asthmatic attacks. Investigation may reveal the impossibility of correcting the conflicts and prognosis is therefore poor to hopeless. Baldwin et al.[4] found 20 per cent psychoneurotics and 4 per cent psychotics in a series of 325 patients hospitalized for asthma.

Factors which influence the prognosis unfavorably are: psychiatric problems, onset of asthma after middle life, absence of demonstrable allergic sensitivities, emphysema, complicating cardiac disease and sinus disease, and long duration of asthma, particularly if associated with bronchitis.

Factors which are favorable are: onset of asthma in childhood (provided you see the patient in childhood), short duration of asthma when treatment is begun, establishment of clearcut sensitivities with evident causal relation to attacks, seasonal incidence of attacks with relationship to a single allergen and the absence of respiratory complications.

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N. U. Medical Chairman Named President of Diabetes Association

Dr. Arthur R. Colwell, chairman of the Department of Medicine at Northwestern University's Medical School, has been elected president of the American Diabetes Association.

Associated with Northwestern since 1933, Dr. Colwell also is the Irving S. Cutter Memorial Professor of Medicine. He took his undergraduate work at the University of Chicago and received his M. D. degree from Rush Medical School, Chicago.

Improved Digitalis Therapy

Safer and Smoother, Colloid-Protected U.S.P. Digitoxin Medication

FRANK L. HALEY, M.D.
New Milford, Conn.

Digitalis therapy had its origin in folklore but has now reached a stage of scientific precision. William Withering in 1776 learned of the value of foxglove "for dropsy" from an old grandame in Shropshire. Trying it in heart diseases and observing remarkable results, he laid the foundation for one of the greatest achievements in cardiology.

Due to variations in the potency of the leaf, the results of digitalis medication were largely unpredictable until the cat assay method became official in 1942. The admission of digitoxin, the active glycoside of digitalis, to *U.S. Pharmacopoeia XIII in 1947* established digitalis therapy on an exact basis.

Digitoxin is the active principle of known potency and can be administered in terms of weight. The average maintenance dose is 0.1 mg. Since digitoxin is completely absorbed from the intestinal tract and fixed by the cardiac muscle, usually in a period of three to four hours, a prediction can be made as to its therapeutic action. Furthermore, the absence of nausea and vomiting caused by irritating impurities in digitalis leaf and tincture is a further advantage.

As Sollmann[1] says, digitoxin "is absorbed practically completely from oral administration, so that the full therapeutic effect in patients with auricular fibrillation is the same for oral and intravenous administration. . . . Intravenous administration acts somewhat more promptly than oral, but in three or four hours the effects are about the same."

In a study of the pharmacological basis of cardiac therapy, Gold[2] in 1946 found that digitoxin is rapidly and completely absorbed. This rapid and complete absorption of digitoxin is in itself a danger which must always be considered. In many cases the suddenness of the impact strikes the heart with a terrific digitoxic punch. This explains the harmful effects from digitoxin overdosage which were reported by Master[3] in 1948.

An important contribution to the safety and improved efficacy of digitoxin was reported by Ferguson[4] in 1950. By combining digitoxin with a protective colloid, sodium carboxymethylcellulose, the acute toxicity of digitoxin was reduced and its therapeutic action prolonged. As shown by clinical and electrocardiographic observations, as well as Ferguson's assays on cats, "a safer, smoother, more sustained cardiotonic action was obtained with digitoxin plus carboxymethylcellulose than with digitoxin alone."

TABLE I

Clinical Summary of Cases

Case #	Name	Sex	Age	Height (in.)	Weight (lb.)	Maintenance Dose of Foxalin per day (mg.)	Foxalin Administered for	Diagnosis
1	F.N.	F	58	63	253	0.2	2 mo.	Myocardial Damage Obesity
2	C.N.	M	52	72	160	0.1	6 mo.	Myocardial Damage Auricular Fibrillation Tachycardia
3	J.B.	M	53	67	125	0.2	1 yr.	Myocardial Damage Massive Infarct
4	M.S.	M	43	71	186	0.1	5 mo.	Residual Coronary Infarction Hypertensive Heart Disease
5	M.M.	F	69	62	160	0.1	3 yr.	Myocardial Damage Auricular Fibrillation Left Ventricular Hypertrophy Cardiac Asthma Diabetes
6	F.M.	M	42	68	185	0.1	2 yr.	Myocardial Insufficiency
7	C.E.	M	58	71	224	0.1	1½ yr.	Myocardial Damage
8	M.H.	M	70	70	168	0.1	1 yr.	Myocardial Weakness
9	M.C.	F	62	63	155	0.1	3 yr.	Auricular Fibrillation Myocarditis
10	M.F.	F	62	60	150	0.1	1½ yr.	Myocardial Weakness Asthma
11	P.Z.	M	70	68	155	0.1	5 mo.	Residual Effect of Coronary Attack Myocardial Weakness
12	R.Z.	F	69	63	152	0.1	6 mo.	Hypertensive Heart Disease Myocardial Weakness
13	J.Z.	M	47	69	167	0.2	2 yr.	Cardiac Hypertrophy Myocardial Weakness
14	R.W.	M	60	68	151	0.2	1½ yr.	Acute Anterior Wall Infarction
15	M.G.	M	40	68	185	0.15	3 yr.	Angina Pectoris Cardiac Enlargement
16	M.C.	M	56	66	142	0.1	2 mo.	Residual Coronary Infarct Myocardial Damage
17	M.B.	F	63	63	125	0.2	1½ yr.	Myocardial Damage Congenital Cardiac Asthenia
18	C.G.	F	55	62	132	0.2	1 yr.	Myocardial Weakness Secondary Anemia
19	C.B.	M	66	65	185	0.1	6 mo.	Myocardial Damage Cardiac Enlargement Thromboangiitis Obliterans
20	M.C.	F	74	63	182	0.1	2 mo.	Cardiac Enlargement
21	B.D.	M	62	66	194	0.2	2 yr.	Hypertensive Heart Disease Myocardial Damage Cardiac Asthma Angina Pectoris
22	J.K.	M	72	67	124	0.1	4 mo.	Myocardial Damage Cardiac Asthma Arthritis
23	A.M.	F	61	63	140	0.1	1 mo.	Arthritis Possible Myocardial Damage
24	I.W.	F	56	65	166	0.1	1 yr.	Tachycardia Left Ventricular Hypertrophy Myocardial Damage
25	O.W.	F	50	63	175	0.1	2 yr.	Pseudo-Angina Diabetes
26	J.F.	F	60	62	160	0.1	3 yr.	Myocardial Damage Pernicious Anemia
27	F.C.	M	71	68	170	0.1	1 wk.	Myocardial Damage Cardiac Hypertrophy
AVERAGE		15M 12F	63	66	165 3/5	0.13	1¼ yr.	

The addition of the protective colloid to digitoxin was suggested to Ferguson by an observation made while studying the effect of digitoxin upon the cat's heart by means of the U.S.P. XIII assay method which was official for tincture of digitalis. It was found that addition of sodium carboxymethylcellulose delayed the poisoning action of the lethal dose of digitoxin upon the cat's heart, although the final full activity of the drug was not impaired. It was this pharmacological discovery which led to the clinical studies.

Two groups of cases were studied by Ferguson. One group was treated with plain digitoxin; the other, with digitoxin plus sodium carboxymethylcellulose. Both the clinical and the electrocardiographic findings showed a smoother and more sustained therapeutic action in the group receiving digitoxin plus sodium carboxymethylcellulose.

The prolongation of therapeutic effect by combining sodium carboxymethylcellulose with digitoxin is comparable with the mechanism of protamine insulin. It is well known that a combination of insulin hydrochloride with protamine from certain fish exerts a more prolonged action than insulin alone. In both instances the result is obtained because of a slower absorption rate.

Formulation of Foxalin Foxalin contains digitoxin U.S.P. 0.1 mg. per tablet combined with the protective colloid, sodium carboxymethylcellulose. My clinical and electrocardiographic studies with Foxalin* have convinced me that this drug offers a reliable means of safer and smoother digitoxin medication.

In brief, Foxalin equals the absorption qualities of digitalis tincture, while retaining the advantages of standardization by weight and lack of the side-effects found in digitoxin.

Clinical Observations The present series consists of 27 patients, 15 male and 12 female, for whom digitalization was considered indicated on the basis of clinical and electrocardiographic findings. Twenty-two (81.5 per cent) of the patients had myocardial involvement. In others the primary reason for treatment was infarction, angina pectoris or cardiac enlargement. Complications such as auricular fibrillation, tachycardia, hypertensive heart disease, cardiac asthma, left ventricular hypertrophy or cardiac asthenia coexisted in many cases. A clinical summary appears in table 1.

Administration of Foxalin 1.2 mg. given over a period of two days in most cases effected rapid but smooth digitalization without untoward reaction. The dose of Foxalin necessary to maintain the digitalis action was 0.1 mg. daily in 19 cases, 0.15 mg. in 1 case and 0.2 mg. in 7 cases. No evidence of digitoxin poisoning was observed. The shortest period of treatment was one week, the longest three years, an average for the series of one and one quarter years.

Clinical symptoms such as edema of the ankles, shortness of breath, excessive fatigue, asthenia and nocturia responded readily to the digitalization dose of Foxalin and were kept under control by the maintenance dose in most instances. Results of treatment upon the symptoms are summarized in table 2.

TABLE 2

EFFECT OF FOXALIN UPON SYMPTOMS

Symtoms	No. of Complaints Before Foxalin	After Foxalin % Cleared	% Improved	% Unchanged
Edema of Ankles	16	62.5	31.2	6.3
Shortness of Breath	14	71.4	7.1	7.7
Excessive Fatigue	13	76.9	15.4	7.7
Asthenia	12	50.0	41.7	8.3
Nocturia	3	100.0	0.0	0.0

*The Foxalin used in this research was supplied by Grant Chemical Company, Inc. of New York City.

Electrocardiographic Findings Electrocardiographic studies were made before and during the period of Foxalin treatment. They evidenced the expected digitalis action without any of the toxic arrhythmias which not infrequently occur when digitoxin alone is administered.

Irregularity of rhythm, which is an indication of poor cardiac action, was normalized when present by Foxalin administration. In two cases, sinus arrest was not affected adversely by digitalization. Blocking of the auriculoventricular conduction, a toxic manifestation of digitalization due either to a late effect or too rapid digitalization, did not occur.

Auricular and ventricular rates were normalized after Foxalin. For example, in cases 2 and 14 the tachycardia was relieved, the rapid rate being reduced toward normal; while in case 15 the low rate of 60 was increased to 80.

An unavoidable and oftimes undesirable effect in digitalization is slowing of conduction between the auricle and ventricle as shown by increase in the PR_2 interval. In this series of cases only two evidenced any increase (0.02 in both instances) and one showed a decrease of 0.03. The change was minimal and can be considered insignificant.

Lengthening of the QRS interval is indicative of intraventricular conduction defect. Before treatment no such defect was observed in this series nor did such a defect occur as a manifestation of toxicity from Foxalin.

ST-T depression is a pathognomonic sign of digitalis action, being proof of fixation by the heart muscle. This finding was consistent throughout the series of cases.

Increase in QRS voltage towards normal is a desirable effect of digitalis, indicative of stimulation of myocardial action. In this series, extremely low voltage, which was observed in four patients before medication, increased to a more normal level with Foxalin.

No pulsus alternans and no alternation of QRS complexes were observed in this series. Such arrhythmias are some of the ill-effects noted when digitoxin has been administered alone.

Case Reports The following cases are reported in detail. They have been selected from the series as having typical response to Foxalin and yet varying with regard to the clinical picture.

Case 2. C.N., 52-year-old male, weighed 160 lb. and was 72″ tall. He complained of cough and intermittent bouts of fever of two years' duration. X-ray of the chest showed residual lung abscess and a small asthenic heart. Electrocardiogram showed no abnormality. The lung abscess healed successfully under treatment.

Soon after the last negative x-ray and negative electrocardiographic findings, he developed a fainting spell accompanied by extreme weakness and rapid pulse. Electrocardiogram taken at this time revealed considerable irregularity of rate. Auricular rate was indeterminate. Ventricular rate was approximately 115 but irregular. There was a lack of constant relationship between the auricular and ventricular phases of the heart. There was left axis deviation; PR_2 and QRS_2 were indeterminate.

Diagnosis: Auricular Fibrillation
Myocardial Damage
Tachycardia

Digitalization was effected with 0.2 mg. Foxalin three times a day for two days and maintained with 0.1 mg. daily. Following digitalization the fibrillation was reduced in amount and the beat normalized to some extent. The rate was slowed and tachycardia relieved. Clinical recovery was rapid also. Within a week the patient was able to get about and continue with his usual duties but was forced to rest for a few hours in the afternoon and to retire earlier at night. In view of the fact that his work was of an extremely light

nature, he was advised to carry on as usual.

Case 3. J.B., 53-year-old male, weighed 125 lb. and was 67″ tall. For a year previous to the development of any pathognomonic signs of myocardial insufficiency, this patient complained of excessive fatigue. There was no direct indication of myocardial strain in the electrocardiogram but left axis deviation and cardiac enlargement were present. The symptoms seemed referable to liver pathology, which had been present since the war. Although he was treated with glucose and amino acids for this condition, he continued to complain. Electrocardiograms indicated extremely high voltage in leads IV and V, similar to that found in hypertensive heart disease. The blood pressure, however, was normal.

The patient was digitalized with 0.2 mg. Foxalin three times a day for two days and maintained on 0.2 mg. per day for three months. During this time he felt somewhat better but decided to discontinue its use.

Four months later, following a week of extreme activity which was contrary to the advice of his physician, he developed anginal pain and massive infarct. Electrocardiogram proved the finding of massive infarct. The patient recovered and was able to sit up within two months.

Diagnosis: Myocardial Damage
Massive Infarct

It was felt at this time that digitalization with Foxalin would be helpful in maintaining cardiac action at a working level. He was, therefore, digitalized in the same manner on 0.2 mg. Foxalin three times a day for two days and maintained on 0.2 mg. daily for the past year. During this time he was able to follow his occupation. Electrocardiograms still showed inversion of QRS complexes as a residual result of myocardial infarct. The rate, however, was regular, approximately 92, PR_2 interval 0.20 and QRS_2 0.10.

Clinically, this patient showed remarkably good recovery and, although the cardiac disease was of dangerous import, it was felt that his condition was better than the usual result following massive infarction.

Case 5. M.M., 69-year-old housewife, weighed 160 lb. and was 62″ tall. She experienced her first episode of shortness of breath, excessive fatigue and weakness at the age of 40. At that time a diagnosis of menopausal syndrome and cardiac insufficiency was made. Tincture of digitalis was utilized from time to time with fairly good results. The patient complained of ankle edema, which was worse at night;

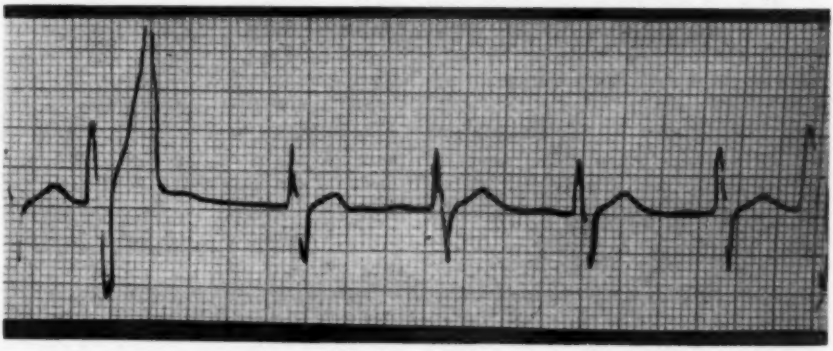

Fig. 1. Composite view of Lead III of a number of undigitalized subjects. There are premature ventricular beats with irregularity induced thereby. There was myocardial damage with the usual clinical signs of myocardial weakness and ankle edema in all cases utilized in the formation of this composite.

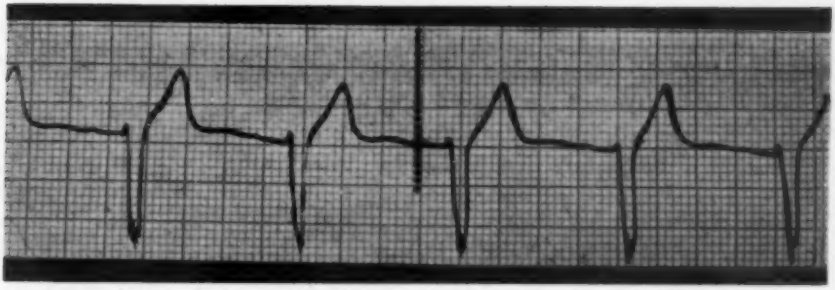

Fig. 2. Shows effect of full digitalization by means of Foxalin, 6 doses of 0.2 mg. There is an increase in height of T wave and reduction of incidence of premature ventricular beat. There was increased cardiac capacity, as evidenced by loss of ankle edema and weakness in each of the clinical cases used in this comparison.

also of shortness of breath, which became acute on climbing stairs. She required elevation of her head and shoulders in order to sleep. Three years ago there was an acute episode of shortness of breath and weakness. Electrocardiogram showed irregularity of the heart with auricular fibrillation.

Diagnosis: Myocardial Damage
Auricular Fibrillation
Left Ventricular Hypertrophy
Cardiac Asthma
Diabetes Mellitus

Patient was digitalized with 0.2 mg. Foxalin three times daily for two days. Electrocardiograms were taken at the end of three, five, eight and twenty-six hours. These electrocardiograms showed progressive diminution of fibrillation, slowing of the beat and increased regularity. The twenty-six hour electrocardiogram showed ST-T depression, no fibrillation and regularity of beat. The digitalization effect was fully accomplished within forty-eight hours and there was complete clinical recovery.

She has been maintained on a daily dose of 0.1 mg. Foxalin for three years. During this time the heart has been strong enough to survive a number of attacks of auricular fibrillation. These attacks are characterized by marked pallor, with weakness rendering the patient completely helpless and sometimes apparently moribund. It was felt that the continuous use of Foxalin was responsible for the reduction of cardiac asthma suffered by this patient and for the marked improvement in the condition of her heart.

Case 6. F.M., 42-year-old male, weighed 185 lb. and was 68" tall. Before the age of 40, this patient was extremely robust and athletic. During his fortieth year he began to complain of cough on exertion and extreme fatigue. Examination revealed pitting edema of the ankles and cardiac enlargement on percussion. The patient had noticed ankle edema during the last three months but had not thought it important enough to report to the physician. Family history revealed that one parent had developed myocardial disease at the age of 40.

Electrocardiogram showed tendency to left axis deviation, auricular and ventricular rate 83, PR_2 0.20, QRS_2 0.06, rate regular and sinus rhythm. Interpretation of electrocardiogram based on low voltage was myocardial insufficiency.

Diagnosis: Myocardial Insufficiency

Digitalization was effected with 0.2 mg. Foxalin three times a day for two days and maintained with 0.1 mg. daily.

Ankle edema was completely relieved but it was not until the patient changed his working schedule to allow for more rest that the excessive fatigue was eliminated. Electrocardiogram following digi-

talization showed PR_2 interval increased to 0.22, increased voltage and some depression of $ST\text{-}T_1$. Digitalization with Foxalin has been maintained for two years.

Case 7. E.E., 58-year-old obese male, weighed 224 lb. and was 71″ tall. About two years ago he developed pneumonia following exposure during the winter. A long period of convalescence totaling four months was necessary. Electrocardiograms taken during this time revealed high take-off of the ST-T level showing incomplete relaxation of the ventricular phase, evidence of toxic myocarditis. There was gradual subsidence of the toxic myocardial picture. Later electrocardiograms showed auricular and ventricular rate 60, PR_2 0.18, QRS_2 0.06, left axis deviation and regular rate. ST-T segment had finally become level. There was T_3 inversion and extremely low voltage of the QRS complex of lead II. On return to work, the patient found himself unable to keep up with his usual daily schedule due to fatigue.

Diagnosis: Myocardial Damage

The patient was digitalized with 0.2 mg. Foxalin three times a day for two days and maintained with 0.1 mg. daily. He became stronger and was able to pursue his daily work without difficulty. Electrocardiogram showed higher voltage and depression of ST-T segment. Digitalization with Foxalin has been continuous for one and one half years.

Case 9. M.C., 62-year-old female, weighed 155 lb. and was 63″ tall. During the past four years she has had episodes of flutter of the heart, mental depression, excessive fatigue and faintness. An episode would last about a week and would be followed by such symptoms as shortness of breath, increased respiratory rate and fatigue. Electrocardiograms taken during the attack revealed auricular fibrillation and myocarditis. The rate and the usual constants were irregular and thus not measurable. There was some ST-T depression. Electrocardiogram taken after the attack had subsided continued to show some auricular fibrillation, although reduced in amount, and the same degree of myocarditis.

Diagnosis: Auricular Fibrillation
Myocarditis

She was digitalized with 0.2 mg. Foxalin three times a day for two days and then given a maintenance dose of 0.1 mg. daily. The paroxysmal auricular fibrillation was entirely relieved. No further attack occurred during the three year period during which Foxalin was administered. Another type of tachycardia developed without fibrillation.

Electrocardiogram taken at this time showed digitalis effect, myocarditis, occasional sinus arrest and tachycardia. Review of previous electrocardiograms was made to check on the finding of sinus arrest and it was observed that this phenomenon had been present in all previous electrocardiograms but that it had been overlooked in view of the spectacular nature of the auricular fibrillation overshadowing this manifestation.

Following the attacks of tachycardia, the patient complained of weakness which would be relieved in a few weeks.

Electrocardiogram taken a month afterward showed some irregularity of rate and rhythm, digitalis effect and myocarditis. Auricular and ventricular rate was 80, PR_2 interval 0.20 and QRS_2 0.10. This was the first time that these intervals could be measured. There was a tendency to left axis deviation. Subsequent electrocardiograms showed digitalis effect with $ST\text{-}T_{1\cdot2\cdot3}$ depression and an irregular sinus rhythm.

The improvement as noted in the electrocardiograms was quite spectacular in this case. Clinical symptoms were also improved to a large extent. The patient, however, regarded the attacks of tachycardia with the same apprehension and fear that she used to regard the attacks of fibrillation (cardiac neurosis), although she had been informed that technically there is a wide difference in importance, the fibrilla-

tion being dangerous and the tachycardia just being uncomfortable.

Case 10. M.F., 62-year-old female, weighed 150 lb. and was 60″ tall. She complained of progressive asthenia for three years, which was blamed on her secondary type of anemia. Various supportive measures were given together with ferrous salts; this had very poor results. The patient had a tendency to overweight and, upon investigation of her diet, it was discovered that there was low protein, high carbohydrate intake. A change to a high protein diet caused better hemoglobin response. The weakness, however, persisted as did ankle edema, which was at first thought to be due to hypoproteinemia. Physical examination showed cardiac enlargement and increased respiratory rate of thirty per minute.

Diagnosis: Myocardial Weakness
Asthenia

Digitalization was accomplished by 0.2 mg. Foxalin three times a day for two days and maintained by 0.1 mg. daily for a year and a half. The patient felt much better; ankle edema was reduced but the asthenia persisted.

Case 14. R.W., 60-year-old male, weighed 151 lb. and was 68″ tall. His history showed that two years ago he was awakened from his sleep by a severe precordial pain. This was followed by a feeling of faintness after walking a few yards. There were no other symptoms. He was confined to bed for a period of three months.

Electrocardiogram taken during this stay in bed showed tachycardia, greatly lowered QRS voltage and indication of anterior infarction. During the second month of his confinement, the patient was too weak to move about in bed. QRS voltage was almost unmeasurable.

Diagnosis: Acute Anterior Wall
Infarction

Digitalization was accomplished with 0.2 mg. Foxalin three times a day for two days and maintained on a dosage of 0.2 mg. daily.

Three weeks later, the patient was able to sit up in bed and an electrocardiogram showed QRS voltage increased to almost normal. He was permitted to get out of bed the following week. An electrocardiogram taken three months later revealed digitalis effect; QRS voltage was maintained, PR_2 0.2, QRS_2 0.06, auricular and ventricular rate 92, rate regular, rhythm sinus. The residual effect of anterior infarction was still present with further interpretation of left ventricular strain. The patient has been maintained on Foxalin for one and a half years and has been able to manage his business.

It is interesting to note that electrocardiograms taken three years prior to the coronary episode were completely normal. Again one year before the attack, an electrocardiogram was normal except for ventricular extrasystoles. At this time a test was made before and after smoking to determine whether tobacco had an irritant effect in causing the premature ventricular beat. The electrocardiographic constants were exactly the same before and after smoking.

Case 27. F.C., 71-year-old male, weighed 170 lb. and was 68″ tall. He was an elderly, retired man who liked to be active but who had been advised to curtail his activities for the sake of his health. He complained of chronic leg ulcer with exacerbation from time to time. Recently there had been ankle edema, shortness of breath and considerable gain in weight (probably due to the edema). Physical examination was essentially negative except for enlargement of the heart on percussion. Electrocardiogram showed a fairly normal pattern with left axis deviation, PR_2 0.22 and QRS_2 0.9.

Diagnosis: Myocardial Insufficiency
Cardiac Hypertrophy

Digitalization was recommended and effected with Foxalin 0.2 mg. three times

a day for two days, then maintained by 0.1 mg. per day.

After one week of medication, an electrocardiogram showed slight depression of ST-T segments, some voltage changes in leads I, II, and III, but leads IV and V remained constant. Digitalization was accomplished without any untoward effect, while the patient was ambulatory, and resulted in general clinical improvement. Ankle edema was reduced and shortness of breath relieved. The patient felt stronger and was able to walk about during the day without distress.

Clinical improvement substantiated by electrocardiographic findings was observed after digitalization with Foxalin. This case is of further interest because rapid digitalization was effected without any untoward reactions in an elderly individual, many of whom cannot stand rapid digitalization.

Conclusions

1. The combination of the protective colloid, sodium carboxymethylcellulose, with U.S.P. digitoxin prolongs the therapeutic effect and reduces the acute toxicity.

2. The action of Foxalin (colloid-protected U.S.P. digitoxin) is safer, smoother and more sustained than that of digitoxin.

3. Pharmacological studies on the cat's heart confirm the greater safety of Foxalin as compared with digitoxin.

4. In a series of 27 cardiac patients treated with Foxalin, the following symptoms when present were cleared or improved in the indicated percentages: edema of ankles 93.7%, shortness of breath 92.3%, excessive fatigue 92.3%, asthenia 91.7% and nocturia 100%. In no case did these symptoms become worse.

5. Electrocardiographic studies in this series showed the expected digitalis therapeutic action. In no case was there any toxic arrhythmia. Such arrhythmias are frequently observed after use of unprotected digitoxin.

6. Delayed auriculoventricular and intraventricular conduction, as evidenced by prolongation of the PR_1 and QRS intervals, was insignificant with use of Foxalin. These undesired effects in serious degree are of common occurrence with use of unprotected digitoxin.

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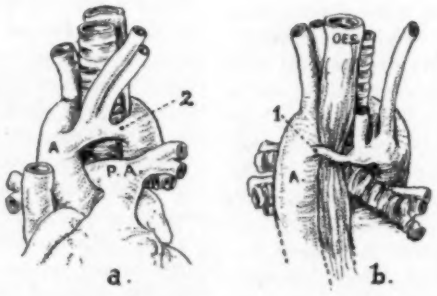
Washington Depot, Conn.

Clini-Clippings



a. Most common type of double aortic arch—2, is the ant. segment of the aortic arch.

b. Double aortic with—1, rare posterior segment of the aortic arch. (after Potts)

From Larkowski and Rosanove's "Hospital Staff and Office Manual."

Simplified Management of Diabetes

ELDON S. MILLER, M.D.*
Kansas City, Kansas

It will be my purpose in the short scope of this discussion to try to present a concise method by which the physician can treat the diabetic with reasonable accuracy and minimal effort on both the part of the physician and the patient. In the hands of the average practitioner the simplest method will be the best one as it saves time for the average busy physician, and again the more complex the regimen the less likely is the patient to follow it.

When a person appears before the doctor for insurance or routine physical examination and sugar is found in the urine or when a person appears who has, thinks he has, or does not think he has diabetes there are a number of things to consider before a definite and correct conclusion can be arrived at. First prove which of the ideas is correct. Never tell a patient he does not have diabetes when you examine a urine specimen and find it negative for sugar by the standard tests for glucose in the urine; always have the specimen taken 3 hours after a heavy carbohydrate meal. Neither should he be told that a trace of sugar does not amount to anything, or he has probably eaten too much candy or sweets before his examination, for this may be the patient for whom you can do the most by keeping his diabetes mild, sometimes for the rest of his life, or by prevention of more severe complications. The American Diabetes Association has as one of its purposes through the establishment of Diabetic Week the bringing to light of the mild undiscovered diabetic who is not aware of his disease, before it progresses to a more severe state and irreversible complications make their appearance. When a positive copper reduction test is obtained this does not prove beyond doubt that the patient has diabetes. Fructose and pentose, maltose, lactose and galactose are probably more frequently responsible for a positive copper reduction test than is generally recognized.[1] Ascorbic acid in large doses can also cause a positive reduction.

A blood sugar of 130 mg. fasting or 170 mg. taken 1½ hours after a meal means diabetes. A 4 plus urine sugar or even less usually means diabetes but of course renal glycosuria is to be ruled out. This can be done by finding a normal blood sugar with considerable glycosuria that is present at all times. Pentosuria and fructosuria, which are rare conditions, can be ruled out by the same procedure.

* Assistant Professor of Medicine, University of Kansas Hospitals, Chief of Medical Staff at Bethany Hospital.

The glucose tolerance test is not a physiologic test and need not be used except in very rare circumstances for diagnosis. A test meal consisting of two slices of bread, an average serving of potatoes with gravy, a piece of pie and sugar in coffee or tea is a more physiologic test, more enjoyable to the patient and probably better than the glucose tolerance test. A blood sugar taken 90 minutes after this meal will give the accurate and desired information for diagnosis. Many mild diabetics have a normal fasting blood sugar but have a high postprandial blood sugar with glycosuria.

When the diagnosis is proven a number of factors are to be considered before a definite routine treatment can be outlined, such as age, activity, occupation, sex, weight and even habits.

As a general rule the earlier the age at which diabetes appears, the more rapid will be the progress of the disease, and the greater the age the more benign will be the course. Prior to 1922 before insulin was available 208 of Joslin's childhood and adolescent diabetics lived only two years, whereas the patient who developed this disease after the age of 40 years lived more than four times that long.[2]

The childhood and juvenile diabetics should always be classed as severe and precautions taken, with this in mind. The diet should always be one of maintenance. A child of 10 or 12 years needs at least 3 grams of protein per kilogram and as many calories and maybe more than the parent. The average protein requirement for the adult is 1 gram per kilogram body weight. This child on a basic diet will require about 50 calories per kilogram. With this in mind and the protein requirement established the remainder of the diet can be made up with carbohydrate and fat in ratio of about 2½:1. At the age of 20 to 50 years the basic food requirements are about 25 calories per kilogram, and after the age of 50 years it will be decreased to about 20 calories. Sedentary activity requires 20 to 30 per cent increase and strenuous activity about 30 to 50 per cent increase over the basic requirements although with excessive activity the calories may be doubled or even more needed. On the average women require about 10 per cent fewer calories than men,[3] while the patient at bed rest but under basal conditions needs 10 per cent more calories than basal requirements. Rather than calculating the caloric requirements it has been my policy to use a uniform diet of 150 grams carbohydrate, 75 grams of protein and 75 grams or more of fat and watch the weight of the individual. If weight reduction is desired it is easy to subtract either the carbohydrate or fat in 10 gram portions. If gain of weight is desirable carbohydrate and fat can be added in 10 gram portions until the weight factor is stabilized, or a gain of weight has been accomplished. A diabetic who maintains an ideal and constant weight as a rule does well. When the scales tip right for the individual one of the adjuncts of successful treatment has been fulfilled.

When an analysis of the patient has been made and the laboratory procedures are at hand the objectives of treatment are then to be outlined. In the uncomplicated case of diabetes the successful accomplishment of these objectives depends upon two therapeutic procedures; namely, diet and insulin. It is necessary that the two be properly synchronized so that the most important objectives of treatment are accomplished and they are as follows:

1. Maintenance of a near normal blood sugar and a sugar free urine for each 24 hour period.
2. Maintenance of a state of normal nutrition.
3. Maintenance of health, comfort and maximum convenience, and practicability of the measures adopted.
4. Education of the diabetic.

Abnormal glycosuria and hyperglycemia are the striking findings of diabetes and

the correction of these conditions is fundamental for the future health, happiness and usefulness of the individual. Contrary to many recent views that have been expressed there is as yet no convincing evidence to disprove the idea that the better the diabetic control the fewer the complications. Good control means freedom from glycosuria and hyperglycemia. The better the control the greater the dividends. Too many times an individual boasts of food indiscretion and insulin to match his whims, and complete disregard of intelligent instruction and basic principles. The penalty may be delayed but when the day of reckoning comes the payment will be exorbitant, and the payment is made in the form of retinal hemorrhages, coronary artery disease or simply the ravages of arteriosclerosis, which lead to blindness, loss of limb and too many times chronic invalidism of years duration. Without question the presence of glycosuria favors the incidence of urinary tract infections.[4] During the past few years there is increasing evidence that persistent glycosuria is almost pathognomonic of prolonged and poorly controlled diabetes. The observation of Lukens and Dohan on dogs made diabetic by injections of pituitary extract furnishes rather convincing evidence that glycosuria is the specific cause of intercapillary glomerulosclerosis or Kimmelstiel-Wilson's disease.[5-6] The deleterious effects of hyperglycemia appear well established both clinically and experimentally, and should not be condoned until the presence of abnormal blood sugars is proved harmless, and it seems wiser to attempt a continuous sugar free state in nearly all such patients. In a few cases whenever feasible a small amount of glycosuria might be permitted, but only then should it be accepted as the lesser of the two evils.

As important as the sugar free state is that of normal nutrition, which should be ensured by a carbohydrate to fat ratio of 2 or 3:1 and one gram of protein per kilogram of body weight made up of the basic foods. These will furnish all the necessary food constituents necessary for that state of nutrition. It is well to remember that when uncontrolled diabetes exists with excessive glycosuria, that state of affairs leads to a polyuria, and a deficiency of the accessory food substances is likely to develop, especially those of the vitamin B complex group. The loss of the water soluble vitamins gives rise to the high incidence of diabetic polyneuritis. As all members of the B complex are water soluble it is most probable that they are literally washed from the body of the diabetic when he is under poor, or no, control. These conditions are likely to occur in the older age groups and in dealing with both private and clinic patients it has been found that some B complex deficiency occurs in more than 90 per cent of diabetics past the age of 50 years who have had their disease for 10 years, the most common of which is thiamin deficiency, manifested in the form of a neuritis. Most of the vitamin deficiencies are slow to make their appearance, and too frequently are due to the slow but sure loss through glycosuria and polyuria until the deficiency is great enough to manifest itself in the form of a neuritis.

Before the days of insulin the only treatment of diabetes was to impose some form of dietary restriction that usually involved a state of under-nutrition, to avoid some of the greater disadvantages such as infections, glycosuria, acidosis and eventually coma. By this method weight loss resulted and a lowering of the total metabolism, resulting in a diminished need for food and usually a better control of glycosuria. Insulin has made this form of slow starvation a back number and is rarely used any longer. Intelligent application of insulin control and dietary balance have taught us by experience that most food and accessory food deficiencies are preventable and that it is possible to maintain a normal nutritional state in a very

high percentage of even severe diabetics.

When a diagnosis of diabetes is made the diabetic should be made aware of the fact that the disorder is a permanent one, and that the disorder will give rise to some inconvenience, discomfort, and undesirable restrictions. Yet experience in planning in detail the desired regimen, shows that with minimum effort the most of the inconvenience and discomfort can be avoided without sacrificing therapeutic efficiency if this objective is borne in mind. Other than diet, insulin is the only effective therapy. It cannot be given orally and there is no oral therapy of any value whatsoever. The diet should be outlined by a skilled dietitian with the assistance of the physician who is also familiar with dietary therapy. Diet substitutions should be taught the patient so his diet will be more palatable when it is in his own hands. The patient can conform with his likes and dislikes if he is thoroughly familiar with substitutions of food values.

Education of the patient is all important, for, without it, successful treatment is doomed for failure. As a rule it is those of the older age group, illiterate and foreign born, who present the most difficult problem. Patients often have many misunderstandings of food values such as "I never eat potatoes or white bread but use whole wheat bread in their place." There is relatively no difference in the carbohydrate content of whole wheat and white bread and the whole wheat bread contains three times as much carbohydrate as potatoes. Another such error is that "I never use sugar but honey is all right, isn't it?" It is a natural sweet. Honey is 85 per cent carbohydrate and 15 per cent water. A basic understanding of the food formula prepared under the direction and cooperation of the dietitian and physician should be required of all patients. If the dietitian is not available it is then the problem of the physician to prepare the dietary formula, for without reasonable diet understanding the diabetic management will not be good. Some method of urine testing for sugar should be a part of the education. The Clinitest is the one of choice because of the simplicity of technic and interpretation of the test. The outfit can be carried in the pocket and the test done in almost any toilet. Simplicity is it's only advantage over Benedict's test.

Insulin technic should include—1. Care of the syringe, needles, and insulin, and the simple type of sterilization with alcohol, giving caution about the elimination of alcohol before measuring the insulin. 2. Filling the syringe and measurement of the insulin and how to eliminate air bubbles. 3. Explanation of the importance of correct type and strength of insulin at all times. Instructions regarding the mixing of insulin if mixtures are used. 4. Injection of insulin with reference to technic and importance of rotation of areas of injection to prevent insulin atrophy and insulin pockets. 5. Cleaning and preservation of syringe, needles and insulin. In the cases treated by diet alone instructions concerning insulin need not be explained.

Whenever a patient is treated with more than 10 units of insulin he should have an exact and comprehensive understanding of the symptoms of insulin shock and when they are most likely to occur with the particular type of insulin he is using. Why they occur, and the principal causes are, namely: too much insulin, too little food or the omission of food, ill balanced or too great interval between meals and too much exercise. Too much or undue exercise always causes trouble if the diabetic is under good control and extra foods not taken. The patient should always have a good understanding of the dangers which might occur under such conditions as a hunting or fishing trip, or athletic games. The locomotive engineer, the driver of his own car and even the farmer who has some days in which he does much more physical labor than he does on other days should know the causes of his re-

action when it occurs and what to do. All diabetics who drive a car should have a few pieces of hard candy in the glove compartments of their cars at all times, so when needed it can be easily obtained. The question of driver's license is of quite some concern when there are a few hundred thousand people who take insulin also driving motor cars. They cannot afford to have accidents because of insulin reactions. It is unforgivable—might cost a driver's license, grief and expense. So "in case of"—take precautions. Some railroad companies have already ruled against the engineer who takes insulin. About 10 per cent of locomotive engineers who reach the age of retirement are taking insulin.

No diabetic has been properly instructed concerning his disease unless he has been cautioned, and cautioned again and again, about the care of his feet. He rarely looses his toes or foot from infection or gangrene if he prevents bruises, cracking and breaking of the skin of his feet. Patients are told that a badly infected foot will cost a thousand dollars more or less and weeks to months in bed with loss of time at work, suffering, anxiety and usually all because of carelessness and sometimes because of lack of instruction. Along with care of the feet should go the care of the skin in general. "Cleanliness is next to Godliness" —"A clean neck rarely boils". So prevent carbuncles. A list of don'ts should be thoroughly implanted in the mind. The list of don'ts is as follows:

1. Don't use "patent" medicines on corns and calluses.
2. Don't use "patent" medicine for athlete's foot, but let a competent doctor treat it. A blister or crack of the skin of the foot may give rise to entrance of an infection into the toes or foot and cause no end of trouble.
3. Don't trim corns with razor blades. The penalty is often severe.
4. Don't dig out ingrown toenails.
5. Don't take electric pads, electric devices, hot water bottles to bed with you to keep the feet warm. Use wool socks or a warm blanket.
6. Don't, if you work in industry, wear shoes other than those with steel toes.
7. Don't go barefooted inside the home, outside the home or when visiting—there might be a splinter, tack or piece of glass on the floor.
8. Don't take hot foot baths—Remember you may have poor sensation in the feet.

SIMPLE CLINICAL CLASSIFICATION BY THERAPY REQUIRED

1. Mild restriction of diet.
2. Moderate restriction of diet.
3. Moderate restriction of diet requiring 10 or fewer units of insulin daily.
4. Accurate diet requiring from 10 to 50 units of insulin daily.
5. Accurate diet requiring more than 50 units daily.

Mild restriction of diet will suffice to control hyperglycemia and glycosuria in 20 to 30 percent of mild diabetics. This can frequently be accomplished by eliminating foods that contain excessive amounts of sugar such as pastries, puddings, candy, jellies, etc. This group of patients should be taught to examine the urine frequently and report for quarterly examinations or at any time they find persistent glycosuria. If obesity exists weight reduction should be insisted upon and the patient instructed to examine the urine frequently during any infection and if there is sugar in the urine to report to his doctor. This simple procedure may prevent complications and progress of the disease with a minimum of effort.

Moderate restriction of diet will control another 10 to 15 per cent of mild diabetics. This group will require the diet to be limited to one slice of bread per meal, fruits and vegetables containing less than 15 per cent carbohydrate and no pastries, with no restrictions of protein or fat foods unless the weight factor need be considered. It is all important that the obese

become thinner, and those of standard weight for age and height maintain that standard. As in the group mentioned above every effort is to be made to maintain the individual aglycosuric and free as possible from infections.

The third group constitutes those who cannot quite control glycosuria by diet alone but excrete small amounts of sugar daily. It is then necessary to give small amounts of one of the modified insulins. If fewer than 10 units of insulin are used the individual is most unlikely to be subjected to insulin shock and it is possible to maintain him aglycosuric with little danger of the disease becoming more severe, and with less danger of infection. A small amount of insulin gives great protection from complications. Probably about 10 per cent of diabetics can be well managed on a small amount of insulin and are much happier and more alert mentally because of a somewhat more liberal diet that can be tolerated because of a little insulin.

In the previous classes of diabetics little trouble is encountered in maintaining patients sugar free and with a very simple routine and minimal effort on the part of the physician and the patient. In the remaining 60 per cent of patients the problem of management becomes a bit more complex. The patient who is not controlled by a small dose of insulin on a restricted diet must then be educated about his diet and be put on a definite amount of food. The diet should always contain 150 grams or more of carbohydrate, one gram of protein per kilogram of body weight as a minimum and up to 3 or 4 grams if it be a child, and enough fat to make up the number of calories needed to maintain weight. If a patient is weighed at each office visit much information can be obtained about the state of control, and whether or not more or less food need be added to the diet. Next to urine sugar and blood sugar determinations the use of scales is most important in the follow-up treatment of the patient. It is desirable and necessary that every person who takes insulin be taught food values and substitutions for carbohydrate, protein and fat constituents of the diet in 5 and 10 gram portions. If this is properly understood the monotony of diet is less noticeable. A rather standard basic diet may be carbohydrate 150 grams, protein 75 grams, and fat 75 grams. If this one diet is well understood food can easily be added to or subtracted from it, as the requirement may be. The most important laboratory procedure is a quantitative urine sugar determination of the 24 hour urine specimen; for example, assume output is 4000 cc. and quantitative sugar is 2.5%; $4000 \times 2.5 =$ 100 grams loss of sugar during the previous day, and should be compensated for by giving insulin, one unit for each 2 to 10 grams of sugar lost. The insulin equivalent of the amount of sugar lost in the urine varies considerably in different individuals and in the same individual at different times, and under different conditions. The insulin dosage can be slowly increased with some degree of accuracy by daily determination of sugar loss in the urine, until the time is reached when the urine is sugar free or approaches it.

Some basic understanding of the physiology of insulin should be explained to patients as to the mode of action, onset of action, the peak of action and the duration, as well as disadvantages of the particular insulin being administered. It is well recognized this is variable in different individuals and the variation may be influenced by age, nutrition, muscular activity and complications due either directly or indirectly to diabetes. It may also be variable in the same individual due to the varying absorption time of different foods and periodic over-activity. Certainly there is a difference in the absorption time into the blood stream of starch and orange juice; this may be evidenced by the fact that orange juice gives quicker relief from insulin reactions than starch. The banker,

doctor or lawyer may be under excellent control except that on the day when he plays golf he has severe reactions at or near the eighteenth hole; or the farmer may be under good control except that when he observes the Sabbath day, he has marked glycosuria, due to lack of activity. Caution should be observed about delaying the regular meal. The car driver should always have candy or something to eat in his car at all times.

Any insulin is good insulin. One kind may serve better under certain conditions than another. Unmodified insulin will serve better when quick results are needed and as a supplement to modified insulin. It has the disadvantage that multiple injections are needed for 24 hr. control. When only one daily injection is needed N.P.H. or globin insulin will supply the needs of the greatest number of diabetics. There are certain individuals under certain conditions in which one of the modified insulins may have a distinct advantage over the others. The choice can only be made when the factors in the living of each individual have been properly evaluated. When the three meals are served close together Globin may be the one of choice. If the three meals are far between protamine zinc can be the one of choice, although some between-meal snack may be required to prevent hypoglycemia.

It is entirely possible for severe glycosuria and insulin reactions to occur during the same day. The estimation of the sugar loss during the 24 hour period may not be sufficient to solve the problem of these difficulties. The patient should be taught to do a four or six period testing and keep a record of these tests as in a chart. From this record his physician can make changes in the diet, add small mid-morning, mid-afternoon or bedtime feedings to head off an impending reaction, or reduce the amount or kind of food to prevent glycosuria, or change the type of insulin administration and dosage to prevent either a reaction or glycosuria. The individual who is sugar free except during mid-morning may be adjusted by giving the insulin at an earlier time before breakfast or by adding 2 to 6 units of regular insulin to his previous dose. Post-lunch glycosuria may be corrected by less lunch, and later afternoon reactions of hypoglycemia can be eliminated by 10 to 25 gram feedings of carbohydrate in mid-afternoon. Post-supper glycosuria is best combated by reduction of the evening meal or by increasing the amount of protamine insulin, and the after midnight hypoglycemia is relieved by a bedtime feeding or the reduction of the protamine insulin.

Comparison of the Action of the Different Insulins

	Onset of action	Peak of action	Duration	Disadvantages
Reg. insulin or cryst.	½ to 1 hr.	3 hrs.	4 to 5 hrs.	Multiple injections for 24 hr. control.
Globin Insulin	1 to 2 hrs.	8 to 10 hrs.	16 to 24 hrs.	Peak of action about 5 p.m. Reac. severe
N.P.H. Insulin	1 to 2 hrs.	About 12	24 or more hours	Require mid p.m. feeding. Early evening reactions.
Insulin Mixt.	Variable, depends on amount of Reg. Insulin contained in Mixt.	Variable	At least 24 hours	Mixing of insulin to suit individual.
P. Z. Insulin	About 1 hr.	Fairly constant action for probably 20 to 24 hours.	At least 24 hrs.	Reactions more frequent after midnight and severe; need of bedtime feeding or near midnight.

The juvenile or other who dances, skates or takes vigorous exercise in the evening should always be told of possible impending reactions and given an extra 10 to 20 grams of carbohydrate, preferably with some protein, to ward off the early reaction. A meat sandwich may be a welcome addition to the diet. The patient who awakens in the morning in a mentally confused state or with severe headache is to be suspected of hypoglycemia.

The severe diabetic may require from 50 to 250 or more units of insulin daily and should always be suspected of some severe complication such as some form of liver disease, thyrotoxicosis, hidden or obvious infection. Probably the most severe of these is the hyperthyroid individual or the association of two metabolic diseases and it would be expected that in such circumstances diabetes would be more severe. Certainly the associated or complicating disease should be treated in much the same manner as though the patient did not have diabetes but with the best possible control of the latter disease. That control can be accomplished in much the same manner as in the less severe form.

When surgical complications intervene the diet should be altered as little as possible; if solid foods are not well tolerated a liquid diet should be substituted with the same food constituents. On the day of surgery the daily dose of insulin should be reduced by one half and the urine tested every six hours using Benedict's qualitative or Clinitest, and following the test give regular insulin according to the color reaction using the chart below:

COLOR OF TEST				
Blue	Green	Yellow	Orange	Red
REGULAR INSULIN				
0	0	4 units	8 units	12 units

Dont's for Diabetics

1. If you have diabetes don't alter the insulin dose. Let the doctor do it.
2. Do not forget to test the urine several times a week. Always after a meal—NOT FASTING. It is less likely to have sugar at the latter time—PICK THE MOST LIKELY TIME.
3. Don't omit insulin if you can't eat, unless the urine is sugar free on repeated examinations during the day. You may need more insulin.
4. Don't increase insulin because of dietary binges — YOU DON'T KNOW HOW MUCH TO INCREASE.
5. Don't use high carbohydrate foods with added sugar.
6. Don't fail to take extra food before taking undue exercise.
7. Don't omit insulin, except on the advice of your doctor.
8. Don't believe there are any pills or patent remedies that will replace insulin. Their use might cost you your life. Only quacks, cults, the inexperienced will tell you this.
9. Don't fail to consult your doctor when you have illness or when you consistently show sugar in the urine.
10. Don't forget that persistent sugar in the urine sooner or later causes trouble.
11. Don't fail to take a certain amount of exercise—Don't allow yourself to get lazy. Exercise improves the efficiency of insulin.
12. Don't get fat. If already fat—reduce. Diabetes and obesity are buddies with no good intentions.

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731 Ann Avenue

Cooper's Ligament Herniorrhaphy

WALTER C. FREESE, M.D., F.A.C.S.
Manhasset, N. Y.

The treatment of groin hernias has been a controversial subject for many years, particularly during the past decade. In my own experience I have gone through several cycles of treatment.

When I first began to do hernias, the standard Bassini or Halsted repair were the most popular and generally accepted methods of treatment. Because of several recurrences encountered after using the Bassini technique, I became keenly interested in the subject and sought for other methods of treatment. I finally adopted the method advocated by Zimmerman. The main principles of his technique were the use of the transversalis fascia, uniting it to the shelving border of Poupart's ligament, then incising the lateral leaf of external oblique fascia at the level of the internal abdominal ring and suturing this flap to the transversalis fascia beneath the cord. The medial flap of external oblique aponeurosis was then sutured to the external aspect of Poupart's ligament, bringing the cord subcutaneously. I continued to use this method for some years, but in 1942, I was impressed with a series of cases reported by Harkins, using the McVay Lothiessen operation which utilizes Cooper's ligament. This procedure may be used for any type of groin hernia—direct, indirect, or femoral. It is based upon sound anatomical principles. It is not necessary to use fascial grafts or sutures. Silk or cotton sutures are adequate.

The anatomical principle upon which the operation is based is that the normal insertion of the transversalis fascia is Cooper's ligament, and not the inguinal or Poupart's ligament. This has been adequately demonstrated by Anson and McVay. Cooper's ligament is also referred to as the superior pubic or iliopectineal ligament. It is a dense fascial structure intimately adherent to the superior pubic ramus, extending from the iliopectineal junction to the pubic tubercle.

Technique of Operation: The usual skin incision is made extending from a point just medial to the anterior superior iliac spine to the level of the pubic tubercle. The external oblique aponeurosis is exposed and incised in the direction of its fibers through the external inguinal ring, preserving the ilioinguinal and iliohypogastric nerves. The spermatic cord is picked up and freed from its bed in the inguinal canal. The cremasteric fibers are incised on the medial aspect of the cord at a high level and an indirect sac is sought. If found, it is dissected free from the cord structures; or, if complete,

Read before the Nassau Surgical Society September 11, 1950.

it may be cut across at any level, leaving the distal portion intact. A finger is next inserted into the sac, and direct or femoral loculation of the sac is sought. If either is found, it is created into an indirect sac by means of Hoguet's maneuver, pulling the peritoneum and loculation through the internal abdominal ring at a point lateral to the deep epigastric vessels. Silk or cotton sutures are used throughout. The indirect or indirectalized sac is next closed at a high level with an internal purse-string suture. The excess tissue of the sac is then cut off and the peritoneum retracts. The residual fascial structures at the level of the internal abdominal ring are next closed with a single purse-string suture, snugging these structures, which include fibers of cremaster and internal oblique muscle and transversalis fascia, about the cord but not including it. This is an important step because recurrences have been reported at this point.

Next, the medial leaf of external oblique fascia is elevated and separated from the internal oblique component of the rectus sheath for a distance of two to three inches. A vertical incision is made in this internal oblique component starting about 1 cm. above the pubic spine and extending upward a distance of 4 to 5 cms. This maneuver was first described by Rienhoff, and its purpose is to relax the underlying transversalis fascia so that it may be united to Cooper's ligament without tension. The internal oblique muscle is picked up with Allis clamps and retracted upward and medially, exposing the transversalis fascia in the region of Hesselbach's triangle. McVay advocates that this attenuated fascia be excised, leaving a firm margin of fascia above.

Next, Cooper's ligament is exposed by sharp and blunt dissection starting at the pubic tubercle and following the superior pubic ramus laterally to the edge of the external iliac vein. The ligament is usually about 4 cms. in length.

The transversalis fascia with the conjoined tendon is next sutured to Cooper's ligament. No muscle tissue is incorporated in the sutures. Three to five sutures are all that is necessary. The necessary number of sutures are placed but not tied until all are in place. The only danger point is with the most lateral suture, where it is essential to avoid the vein. This can be done by retracting it laterally with the index finger. When the sutures

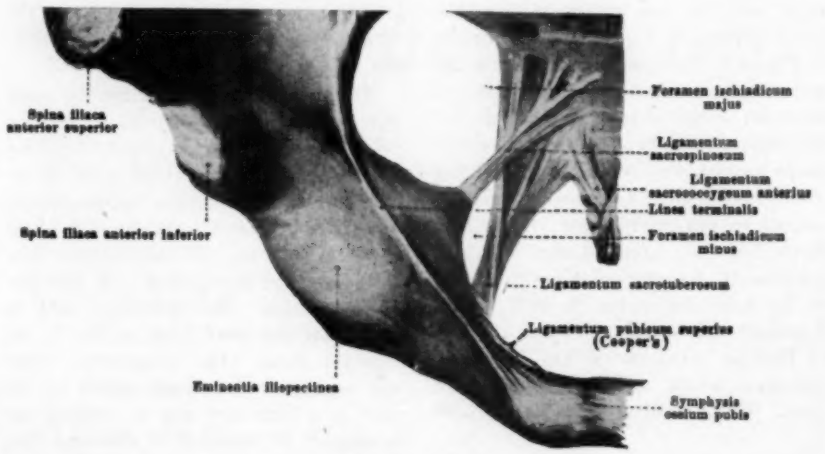

Fig. 1. Anatomical position of Cooper's ligament.

are tied there is a firm wall which will form the floor of the inguinal canal. The spermatic cord is dropped back into its natural position and the external oblique fascia is closed over it with interrupted silk sutures reforming the external inguinal ring. An alternate method is to imbrocate the two leaves of external oblique fascia beneath the cord after the manner of Halsted. Scarpa's fascia is closed with interrupted sutures of fine silk and the skin is closed with clips.

This operation is not indicated in infants with a simple congenital type of indirect hernia with a firm parietal wall. Here, high ligation of the sac and simple plastic closure of the ring will suffice.

I have used Cooper's ligament herniorrhaphy sporadically from 1943 to 1947, but without all the refinements of the just described technique. I would like to report only those cases done by me using this method during the years 1948 and 1949. This does not include all the groin hernias done. A number were done using other methods. There were 24 operations on 20 patients. Two cases had bilateral hernias and two cases were recurrent and reoperated during this period. There were 8 indirect, 8 direct, and 7 direct and indirect (saddle bag), and one femoral hernias in this series. Two cases were strangulated. The indirect hernias were mostly of relatively long standing in which the canal had lost most of its obliquity, carrying the deep epigastric vessels medially toward the outer border of the rectus sheath, and causing a weakness in Hesselbach's triangle.

There were two recurrences; giving a recurrence rate of 8.3%. One occurred at the level of the internal ring and was probably due to improper closure at that level and not because Cooper's ligament was used in the repair. The other case recurred at the lower third of wound and was either due to faulty technique or inadequency of transversalis fascia.

There were two complications. One patient developed a phlebitis and recovered with anticoagulant therapy. The other developed a persistent sinus which has since closed.

Admittedly, this is a small series with only a short follow-up. The follow-up has been for more than six months in all cases. In my experience, most cases recur within six months of operation.

The only observation that I would like to make after my experience with this operation is that in some cases, the transversalis fascia is an extremely thin sheath of tissue upon which to place full reliance for a firm parietal wall. In these cases particularly, I think it would be wise to consider reënforcement with a fascial flap or with tantalum mesh.

Conclusions

The treatment of groin hernias has been discussed.

The technique of Cooper's ligament herniorrhaphy has been described.

Twenty-four operations on twenty patients with a recurrence rate of 8.3 per cent are reported.

Manhasset Medical Center.

Illinois College of Medicine Instructorship Awards

Fourth-year students in the University of Illinois College of Medicine have presented Dr. Frederick W. Hiss and Dr. Carl J. Marienfeld with the Raymond B. Allen Instructorship Awards for the 1950-51 school year.

The awards, designed to honor excellency in individual instructorship rendered by faculty members to students, are presented annually by each class in the College of Medicine.

Dr. Morris Green and Dr. Max Samter were presented with awards by the third-year class. Dr. Earl W. Cauldwell received the second-year award, and Dr. Parke H. Simer received the award from the first-year class.

Intervertebral Disc Complex

HAROLD S. KNOWLES, M.D.
Orlando, Fla.

One of the most formidable problems facing the medical profession today is the treatment of low back pain. Forty years ago pain in the small of the back was called lumbago—all were cured with hot packs, bed rest and salicylates. Then Goldthwait discovered sacro-iliac joints. Our failure to treat these has been responsible for the development of such irregular groups as osteopathy and chiropractic. There was a long era of manipulation by osteopaths and some physicians of these sacro-iliac joints. Many were made worse. Then the medical profession through lack of understanding of the fundamental pathology involved in low back pain and leg pain and cognizant of our inefficiency began to accept any new developments. Sacro-iliac fusions, lumbosacral fusions and fasciotomies took the stage. They soon fell into disrepute because like many things new in medicine they were done promiscuously without regard to indications. Not long after this it became evident that sacro-iliac joints were very strong and stable and rarely if ever caused pain. This sacro-iliac delusion still exists among many physicians although Gaenslen's test rules out sacro-iliacs readily and localizes the pain in the lumbosacral area.

In 1934 Mixter and Barr electrified the surgical world by announcing that extrusion of an intervertebral disc could cause low back pain with a disabling sciatic radiation. Again we ran true to form. This condition and its treatment has been accepted with an enthusiasm beyond rhyme or reason. At first the diagnosis was based on neurological findings but recently neurological findings have not been considered essential. All over the world the general surgeons, orthopedists and neurological surgeons have reported long series of cases relieved immediately by the removal of herniated discs. Some operators even concluded that all low back pain was caused by disc extrusion. One neurosurgeon has stated "The presence of backache and sciatica, worse on coughing and sneezing, makes the diagnosis of ruptured disc unmistakable." It was brought out in our Seaboard Convention of 1947 by a general surgeon that disc injuries were as definite and just as positively demonstrated as a gall or kidney stone. Some men have based their diagnosis on x-rays alone. One neurological group removed 479 discs in a nine-month period. When they operated on a supposedly disc extrusion and were unable to find it, they called it a "concealed disc."

This whole panorama of the disc complex is one of those spectacular episodes like the folic acid cycle or the ulcer surgery cycle that has swung from first gastro-enterostomies for duodenal ulcers, then wide gastric resections and nowadays vagus nerve resection. Today the inter-

vertebral disc pendulum is swinging toward conservatism. The literature the past two years is replete with articles on conservative management.

The reason why so much difference of opinion exists is that sufficient time is not given to the actual study of the individual patients. A man with a backache and a severe pain going down the back of his thigh, the outer side of his calf and into the sole of his foot does not want to be put to bed. Several of his friends had the same trouble and were operated on with complete relief. He does not know how many of his friends will have recurrence and need a second operation. Moreover, according to Chandler[1] sciatica may result from many conditions other than herniated discs and this possibility is ever present.

One of the characteristic symptoms of disc extrusion is periods of remission at intervals. In many cases the annulus fibrosus returns to normal after rest.

Proof of the confusion about disc complex is a report by Aitken and Bradford[2]. They studied the files of the Liberty Mutual Insurance Co. from 1940 to 1944 which contained 170 cases of ruptured intervertebral discs. In these 170 cases there was no agreement on what a normal disc looked like. One case was operated on by a neurosurgeon assisted by two othopedists. Each man forwarded his view of the operative findings. One orthopedist said the findings were normal, while the other stated it was hypertrophic arthritis and the neurosurgeon described the rupture of two discs. Forty per cent of the cases revealed no disc pathology. Forty-six per cent of the no disc pathology cases, and fifty-three per cent of the disc pathology cases showed changes in the reflexes with atrophy and sensory changes. Forty-five per cent of these 170 cases never returned to work. Persistence of the symptoms led to reoperation in forty-one cases. Thirty-one of these had two operations. Eight of these forty-one cases had three operations, two cases were operated on five times. All the procedures were listed as reexplorations, fusions or refusions. One case after four unsuccessful operations had a chordotomy which also failed. In January 1946 the average total costs per patient were $2,902.00 for the cases with disc pathology and $3,990.00 per patient for the cases with no disc pathology on operation. Two to six years after operation thirty-five per cent of the disc cases were still on compensation. The authors stated that the surgeons involved were for the most part nationally famous.

The symposium on low back pain at the sixtieth anniversary meeting of the Am. Assn. of Railway Surgeons last November brought out many observations. Case[3] speaking on the x-ray viewpoint states that simple x-ray study without contrast media is useless in intervertebral disc cases. Retropulsion of the nucleus pulposus may be present without the slightest narrowing of the intervertebral space in forty per cent of the cases. Oldberg[4] on the neurological viewpoint contends that surgeons went overboard on the disc syndrome. Oldberg doesn't operate unless the patient requests surgery but recommends bed boards. He contends there is rarely enough muscle atrophy or muscle weakness to damage patient unless he is a foot racer. Surgical recurrences are very common. When Oldberg does resort to surgery he only removes the ligamentum flavium (ligament that joins the lamina) and rarely removes any bone. He simply retracts the nerve and removes the protruding material. If there is no frank protrusion but a thinned out ligament he thrusts a forceps into it and if some of this white rubbery material protrudes he lifts it out. He feels that not only x-rays but myelograms are of no value. Filling defects are sometimes present in normal disc cases. Oldberg further condemns myelograms as a cause of serious industrial complications. You can't remove the contrast media. It is easier to do an exploration. If in doubt do a simple operation—putting substances in the dural

sheath means a lumbar puncture with a needle in a long time, numerous x-rays, consultations and repeated attempts to remove foreign material—all resulting in a prolonged disability problem. He is against spinal fusion stating it is in essence a permanent bed board and if a recurrence results further surgery is a major problem.

Think about Oldberg's observations. He is the Professor and Head of the Department of Neurosurgery, U. of Ill. School of Medicine, yet he only operates if the patient insists, believes neurological findings are not essential, frowns on value of x-rays and myelograms and is opposed to fusions. He employs only a simple removal of the ruptured material.

There is no doubt that a ruptured nucleus pulposus exists. It is agreed that it usually causes sciatic radiation and that strain from coughing or sneezing aggravates the pain. This occurs because whenever you sneeze, cough or strain you suddenly dilate all the epidural membrane in the spinal column which increases the pressure against the nerve root. The nerve root is already hooked over the protruded disc material. There may be muscle spasm, pain on raising the leg and if the condition persists long enough there will be reflex changes such as loss of ankle jerk if 1st sacral root is involved and diminished knee jerk if 4th and 5th sacral roots are involved. Often there is a loss of sensation along the lateral aspects of the calf and numbness on the lateral side of the foot or the great toe, depending on which nerve root is involved. These are the findings if the protrusion is between the 4th and 5th lumbar vertebra or between the 5th and the sacrum. Ninety-five per cent occur in this region. The cervical disc syndrome is characterized by pain through the shoulder girdle extending down the arm to wrist or hands and fingers with paresthesia of the fingers. The 7th cervical root is most often involved; coughing, sneezing and straining and movements of the neck aggravate the pain. Beyond these facts there is no agreement as to diagnosis or treatment. There is no agreement on the value of x-rays, contrast media, lumbar puncture or total protein content. There is still more confusion in regard to treatment as the treatments have consisted of bed boards, diathermy, traction, manipulation, braces, laminectomies, fusions, etc.

However, the management of these cases today is swinging towards conservatism. One of the characteristic signs of disc extrusion is a complete remission of pain at intervals. It is probable that the protruded portion of the disc, whether the nucleus or the annulus fibrosus, returns to normal in many cases under the influence of rest in bed. The rent in these posterior longitudinal ligaments will then have a chance to heal and may not make trouble again. A disc protrusion, after all, except in rare cases where it is mid-line and produces a cauda equina block, is only a painful condition. Muscle atrophy or weakness is minimal and certainly wouldn't impair the ordinary citizen.

A review of recent articles points definitely toward non-surgical treatment or surgery of a more conservative nature and then as a last resort measure. Loopesko[5] writing in September 1948 *Ind. Med.* describes a treatment for industrial backaches employing progressive fascial ligamentous loosening as advocated by Billig. In 1917 Baer manipulated 100 patients by straight leg raising under anesthesia and produced complete relief in many cases of sciatica. The chief proponents of manipulation are the English. Findler[6] in the February 1949 *Clinics No. Amer.* described a manipulative treatment for both lumbar and cervical disc injuries. He treats the lumbar vertebra cases as follows: after applying some preliminary heat to the back the patient is placed in a lateral position with the under leg extended but the upper leg falls forward in a natural bend. The patient then inclines forward with head on under arm. The

manipulator, behind the patient, places one hand over the posterior and lateral crest of the ilium and the other hand over the lower ribs in front. Then steadily and slowly the ilium is pushed away while the other hand acts as countertraction.

An analysis of more recent literature minimizes disc injuries as a cause of low back pain. Herniated disc as a factor in the industrial back has been greatly exaggerated—many backaches with sciatic radiation have not proven to be ruptured intervertebral discs. Inman and Saunders[7] in a recent article indicated that a disc injury should be the last thing considered. Barton[8] in the September 1949 issue of Industrial Medicine gives an analysis of fifty cases of back pain at a General Motors plant. These fifty cases were selected because they included all the lost time cases from several hundred back injuries in a plant of over 5,000 workers in a two and one-half year period. These fifty cases were the most severe allegedly due to injury. It was interesting to note that there were no intervertebral disc cases in this series. The vast majority was due to lumbosacral strain. The use of work therapy, carefully selected, graded work, did not prolong the symptoms but actually shortened the duration. A few selected cases responded to novocain therapy. Thirty per cent were psychogenic.

From my experience with industrial surgery I can safely state that most of the back cases were lumbosacral or psychogenic. I have had six cases of typical ruptured disc syndrome. Two of them responded to treatment on a bed board and have returned to work. Three other cases were referred to neurosurgeons after conservative treatment. One of them was sent home for further conservative treatment and after bringing suit against the insurance company fully recovered. Laminectomies were done on the other two and failed to show any disc pathology—only arthritis. One of these operative cases had a cervical disc arthritis. One of these operative cases had a cervical disc syndrome. He was operated on in May 1947 and hasn't worked since. The other case I was unable to follow as he left the city. The sixth case, oddly, is another cervical disc that I am treating at the present. Right now he is in a remission stage that I hope is permanent. It is this personal knowledge and experience with intervertebral discs that prompted me to present this subject.

I have not attempted to discuss thoroughly the mechanism of intervertebral disc injury. I have not described the operative procedure for laminectomies or fusions nor have I given a comprehensive analysis of conservative management. This is not the purpose of this paper.

While current opinion may accept the concept that lumbago, sciatica, lumbosacral sprain and sciatic scoliosis represent some form of herniated intervertebral disc, there are many doing industrial surgery who disagree. Furthermore they have statistics to prove their contention as I have already outlined. We must accept the fact that the condition does exist but not to the extent that many at one time believed.

In conclusion I would like to state that we should all treat these industrial backaches with an open mind and be conservative first and foremost. We should strive for a better observation of the patient's mental makeup. A great percentage of these cases are entirely neurogenic. I believe that neurosurgeons and orthopedists should apply more common sense in exploratory laminectomies when a positive disc case is encountered on operation. Many of the poor results are no doubt due to error in diagnosis and poor surgical judgment. Time and experience will result in more conservative treatments and, I hope, better surgical methods.

Discussion by Dr. James Asa Shield
Richmond, Virginia

I think this is one of the finest papers

I have heard on intervertebral disc. It is high time that somebody read such a paper. We have certainly seen, I am glad to say, a swing to the conservative treatment. Some neurosurgeons' intervertebral disc enthusiasm carried them to the point of advising operation for any person who had pain in his back or sciatica-type pain. This was particularly true if there were any slight indication of trauma. Some doctors operated on these patients and then allowed the rest of us to spend a long time seeing them.

The need to listen to our patients, taking the time to elicit the story and to examine them carefully, cannot be overstressed. This thoroughness will often lead to effective conservative therapy. Neuronitis and neuritis are still pain and sensory disturbing entities. The operation should be reserved for those who do not respond to rest and conservative therapy. One must remember that there is no one cause or one therapy for this syndrome.

Dr. Knowles (Closing)

I wish to thank you gentlemen for your discussion of my paper. I haven't anything to add except to say that slipped disc or ruptured intervertebral disc is a commonplace term among the medical profession and even the laity. I believe if we analyze this fact and think for a minute we would be unlikely to give the patient any inkling that disc trouble existed. The average patient suspecting disc pathology might well become a psychogenic problem.

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256 South Orange Avenue

Choline and Inositol in Arteriosclerosis

Dr. L. M. Morrison, writing in the April 21, 1951 issue of the *J.A.M.A.*, bases a discussion of present dietary and medicinal treatment of arteriosclerosis on the recent concept of the condition as a metabolic error, abandoning the idea that aging and arteriosclerosis are necessarily concomitant.

The author's regimen consists of low fat-low cholesterol diet (20-25 Gm. daily), 6 Gm. choline base or 3 Gm. inositol daily, or the 2 materials in synergistic combination, each averaging one half the dose necessary if used alone, and endocrine agents—thyroid and/or estrogenic and androgenic hormones—when indicated by clinical or laboratory findings.

This program, employed for 3 years in 230 patients with coronary atherosclerosis, resulted in

"(1) reduction of mortality to approximately one third of the nontreated patients with coronary atherosclerosis, (2) disappearance or decrease in angina symptoms in many cases, (3) a return to normal or moderate activities or work in a group of patients who were cardiac invalids before treatment and (4) feeling of well-being, better morale and optimism in many patients undergoing treatment."

Despite lowered blood cholesterol in most patients under treatment for 1-2 years, fixed levels persisted in a minority, thought by the author to denote constitutional or familial hypercholesterolemia and/or defective liver function.

Hernia in the Linea Semilunaris

WILLIAM F. MURRAY, M.D., F.A.C.S.
Perth Amboy, N. J.

Spontaneous lateral ventral hernia occurs rather infrequently, and the case report presented here is that of a Spigelian hernia or a hernia occurring through the linea semilunaris. To my knowledge, this is the first case of its nature in the records at Meadowbrook Hospital, and I thought the case would be of interest because of its uncommon occurrence.

Various muscular defects of the anterior abdominal wall have been listed and classified in the anatomical and surgical literature, and to date approximately 100 cases of Spigelian hernias have been reported in detail.

The hernia passes through the line of Spigelius or the semilunar line, lateral to the rectus abdominis muscle. Here occurs the line of transition between the muscle bundles and the aponeurosis of the transversus abdominis muscle. It will be recalled that the upper three quarters of the rectus sheath is formed anteriorly by the external oblique aponeurosis plus the split anterior layer of the internal oblique aponeurosis, while the posterior lamella is formed by the posterior split layer of the internal oblique and the transversus abdominis aponeurosis. At a variable point, but usually midway between the umbilicus and symphysis, all the aponeurotic layers pass anterior to the rectus muscle, this inferior demarcation of the posterior sheath being known as the semicircular fold of Douglas. It is in this latter zone that the hernia most frequently appears, although in rare cases it may occur above the umbilicus. The sac most frequently protrudes through small actual defects in the linea semilunaris. These defects occur where the aponeurosis of the transversus abdominis passes forward and fuses with that of the internal oblique.

These perforations number 5-8 and measure 3-4 mm. in length, and through them pass the intercostal nerves and vessels as well as a branch of the inferior epigastric artery. It is thought that these defects in the aponeurosis may be responsible for a weakening in the abdominal wall offering lessened resistance to strain and thus permitting a herniation. In all probability, in the rare large hernia found in infancy and early childhood, there is also a failure on the part of the local area of the mesoderm of the body wall to differentiate into its proper proportions of aponeurosis and muscle.

The majority of reported hernias fol-

low a similar pattern as noted in our own case. There is always a peritoneal sac whose neck measures 5-3 cm. in diameter, and, because of its size and firmness, strangulation is frequently encountered. Properitoneal lipomas may be found in front of the sac and may have an enlarging influence on the fascial defects previously described.

At the point where the herniation occurs, the external oblique aponeurosis is frequently not fused to the surface of the internal oblique and the hernia comes to lie beneath the external oblique, forming an interstitial hernia.

The sac may contain any part of small or large intestine or omentum but usually only small intestine is encountered. The symptoms are not remarkable, varying from slight recurring abdominal discomfort to those of complete intestinal obstruction. When a mass is palpable the diagnosis is usually apparent, but because of the comparative rarity of the condition it may not be considered and only made on exploration, as happened in our case.

A.T. 42 yrs. White female. Case #81469. Adm. 8-6-49. Disch. 8-14-49.

C.C. Abdominal pain and vomiting—duration 8 hrs.

P.H. No abnormalities elicited; no previous surgery; systemic review negative. No menstrual disorders. Para 6.

P.I. Patient was well until 8 hrs. prior to admission when she was suddenly seized with sharp RLQ abdominal pain while lifting a chair. This pain persisted as a constant localized affair. Vomiting began shortly after the onset of pain, recurring 5-6 times.

Examination revealed a slightly obese female in acute distress. BP 160/104 T 99 P 90 WBC 12,000 P 84% Urine—neg.

Pertinent findings were limited to the abdomen, which was soft and non-tender except in the RLQ where there was a tender mass the size of a golf ball just medial to Mc Burney's point. Rectal examination revealed slight tenderness on the right side.

The preoperative impression was ventral hernia, incarcerated, probably containing

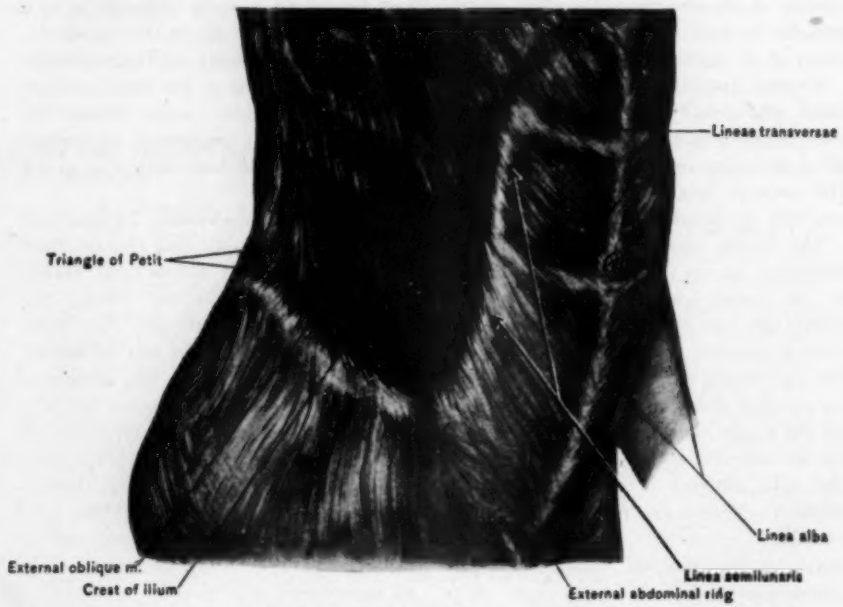


Fig. 1. Anatomical position of the Linea Semilunaris.

omentum. The patient was prepared for surgery, gastric suction instituted, infusion given and bladder catheterized.

Under spinal anesthesia a RLQ oblique incision was made just lateral to the outer border of the right rectus muscle, the midpoint of the incision centered over the palpable mass. The external oblique aponeurosis was incised, revealing a peritoneal sac about 3 by 5 cm. The sac was opened, revealing its contents of small intestine with mild to moderate circulatory embarrassment. The narrow neck of the sac was found to project through a defect in the linea semilunaris and, when this was enlarged by incision and the intestine treated with warm moist packs, normal color and peristalsis returned within a few minutes. The bowel was replaced in the peritoneal cavity and redundant sac excised. The cut edge of peritoneum was approximated with a continuous chromic No. 0 catgut suture. The fascial defect was closed with interrupted No. 2 black silk sutures, as was the external oblique aponeurosis.

P. O. recovery was uneventful and patient was discharged on the eighth day with the wound healed firmly.

214 Smith Street.

Read before the Nassau Surgical Society November 13, 1950.

Nerve Surgery Helps Paraplegics in Convalescent Period

Nerve surgery on some paraplegics in a convalescent stage appears to be justified as a result of experiences at the Van Nuys (Calif.) Veterans Administration Hospital, according to Dr. John D. French, associated with the hospital.

Dr. French, reporting on his observations of 500 paraplegics in a recent issue of the *Journal of the American Medical Association*, explained that at first a paraplegic is under the care of a neurosurgeon. The neurosurgeon evaluates the extent of the injury and does what he can, surgically and otherwise, to facilitate the return of function where damage is not irreversible. Next comes a period of rehabilitation, often long and difficult, during which neurosurgery contributes little. Later, however, he pointed out, rehabilitation may stop short of the ultimate goal for the patient because of new neurosurgical problems which can be helped by a second operation. Seventy-seven of the 500 patients he reported fell into this category and were operated upon because their rehabilitation became static or regressive.

As an illustration, he cited the case of a 30-year-old man who became paralyzed in the lower part of his body as a result of a shell fragment. He said:

"Rehabilitation was never satisfactory because the patient complained of pain in both legs. He was admitted to the hospital three years later, where he made no effort to enter into the usual activities of rehabilitation, apparently being confined by the discomfort. A chordotomy was done two years later after which complete relief of pain was reported. The patient was subsequently discharged from the hospital and now indicates that he leads a normal, comfortable existence."

Because of these and other advances in rehabilitation of paraplegics in recent years, Dr. French said that the feeling of hopelessness that clouded the outlook of these patients has been largely dispelled. They can be taught to talk and walk and can be returned to usefulness, he added.

He estimated that at least one out of every five or six paraplegics requires neurosurgical intervention late in his rehabilitation period.

EDITORIALS

Unnecessary Surgery

Some surgeons have gained the reputation of being quick with the scalpel. This reputation may or may not be justified since there is no constant eye observing each surgeon throughout the universe. Our conscience should be our guide and the opinion of others is not the basis for real judgment. One must remember that a reputation is based upon what people think you are, but character determines what you really are. As in all things the surgeon should be guided by the laws of morality. Although he may have gained the reputation of being quick with the "knife", if the operation is necessary his conscience is clear. If the surgical procedure was not indicated then he will have a troubled conscience for which some day retribution will be demanded.

Unnecessary surgery is a self-explanatory term; it means performing an operation which is not necessary or the removing of a normal organ with knowledge aforethought that no pathology really existed. Many men of medicine are perhaps familiar with the impressionistic surgeon who removes a normal appendix and then rushes to the relatives and says: "I got the appendix just in time. It was just about to perforate. I saved the patient's life". Such actions are morally wrong. It is strange to relate that it seems to be a not infrequent occurrence and those surgeons who do such operations have no apprehension of their disservice to honesty, the profession and their patients.

The gynecologist is often in a position where he may or may not perform a hysterectomy for certain pathological conditions. It is his grave responsibility to preserve a uterus whenever possible rather than to be too hasty in removing it. All of us are familiar with the surgeon who aims at accumulating a great number of cases so that he can say that his experience is based upon hundreds of cases. It is an error for scientific men to speak of experience alone. Experience based upon true knowledge is commendable: experience founded upon an error and repeated as an error is false experience and dangerous.

No surgeon should perform an unnecessary operation willingly. Criticism is not directed at operations resulting because of an honest error in diagnosis. Diagnostic error with honesty condones surgical intervention.

Our surgical system is so constituted that no regulations are placed upon the type of operation each individual may perform. It is true that certain qualifying certificates attest to a surgeon's background, nevertheless a certificate never made a surgeon. A surgeon is tested in the operating room where his two hands and one mind unite to form the trinity of perfections which mark surgical excellence. These are the mental, the moral and the mechanical attributes and instrumentalities. The first concerns knowledge,

the second judgment and the last surgical technic. Fortunate indeed is he who possesses each of these three attributes. This trinity of perfections plus an incorruptible conscience should be the badge of courage and skill typical of American surgeons.

B.J.F.

The Doctor as Therapeutic Artist

In the largest plant in the rapidly expanding field of pharmaceutical production 90 per cent of the 700 items produced are drugs not in existence 15 years ago.

But some neat tricks with old drugs are still a match for the Johnnie-come-latelies. Example—enteric coated tablets of acetylsalicylic acid, prescribed for arthritics and administered when the patient is retiring at night. They take effect in about seven hours and there is much less stiffness and pain upon arising in the morning, ordinarily the most trying period of the day. They come in 5 and 10 grain strengths. "Timed Disintegrating Tablets," the manufacturer calls them.

Thus the old drugs frequently stage impressive competitive come-backs, which add advantageously to their still great virtues. But it's an *Art*, depending upon the practitioner's talent, or, if you will, genius.

The *Art of Medicine*. Those are highly significant words!

Our Onward March

Despite the upward trend of divorce, there is less disruption of family life, with all its evil consequences, than sixty years ago. The statisticians have the figures to prove it. So great has been the drop in the disruptions due to the death of either husband or wife, that the divorce crack-ups are more than counterbalanced.

Here again the credit goes to the achievements of modern medicine.

It is in order to reflect at this point upon the drop in the abuse of the medical profession, once so rampant. The reason is obvious; no group was more traduced a few years ago, for political and other reasons; we continued steadily to improve the health of the people and to lower mortality. Thus tuberculosis, the once great scourge and "captain of the men of death," is on its way to "virtual eradication;" the lives of over 300,000 babies have been saved in the last decade; the general death rate of the country is now not more than 9.7 per 1,000, perhaps much less.

We seem to be leading the world in the reduction of maternal mortality — 1 per 1,000 live births. Around the year 1930 we were near the bottom of the list with a rate of 7 per 1,000 live births.

Further reduction hangs upon still more frequent hospitalization, especially in rural districts.

The whole matter proceeds pari passu with the general expansion of county public health work.

The incidence of family disruption hangs in large part upon the prevention or conquest of parental illnesses of fatal nature, and here medicine registers striking success.

"Times Change and We Change With Them"

In these fiercely competitive days we have brushed off some of the finer amenities which used to distinguish the profession. We recall a time when a medical newcomer in a community was visited and welcomed as a colleague and peer; this was a personal obligation devolving ritually and traditionally upon every individual. And so with a hundred other cultural observances for which there was no written code.

Can it be that in some corner of the world such amenities are still observed? We wonder.

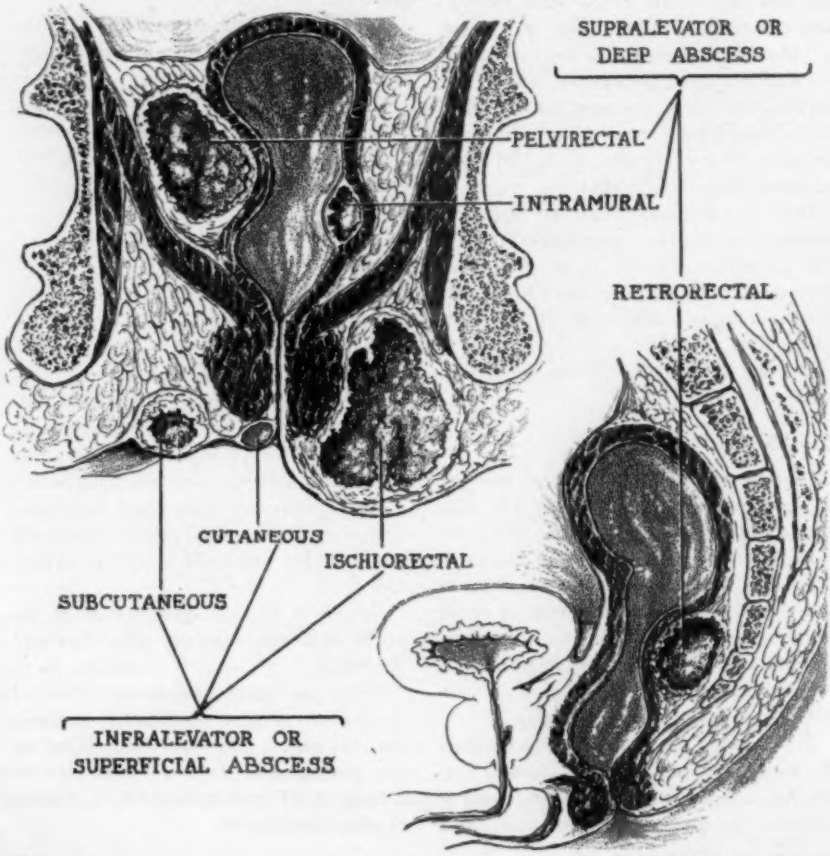
Today we grant awards for this and that—a crowd gesture, albeit a gracious one, but still a mass spectacle. What we are nostalgically talking about is the actions of civilized individuals in relation to other individuals.

Anorectal Abscesses

Abscesses of the anorectal region are circumscribed inflammations with a collection of pus in a cavity formed by disintegration of the infected tissues. (Fig. 1.) They can be classified as:

1. Infralevator or superficial
   a. cutaneous or tegumentary
   b. subcutaneous or marginal
   c. ischiorectal
2. Supralevator or deep
   a. intramural or interstitial
   b. pelvirectal
   c. retrorectal

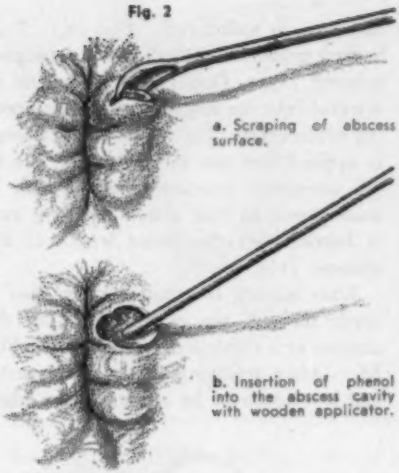
Fig. 1. Abscesses of the anorectal region. (after McNett)



Infralevator abscesses A cutaneous or tegumentary abscess is a pustule or furuncle of the skin surrounding the anal orifice and is brought about by some irritation. It is mobile and can be picked up between the thumb and the index finger. There is no systemic reaction with this type of abscess.

Treatment Consists of scraping off the surface and inserting pure phenol into the cavity with the tip of a wooden applicator. The anal region should be washed with boric acid solution after each bowel movement until healing takes place. (Fig. 2.)

Fig. 2



a. Scraping of abscess surface.

b. Insertion of phenol into the abscess cavity with wooden applicator.

Fig. 3
Appearance of the bulging in subcutaneous abscess.

Fig. 4. Sitting posture assumed by patients with anorectal disease.

Subcutaneous, marginal, perineal or perianal abscess This is the most common variety of abscess in the anal region. It appears as an oval reddened swelling at the anal margin. (Fig. 3.) It is accompanied by persistent throbbing pain, which becomes very intense at the time of bowel movements. Difficulty in urination is frequently present. The patient cannot sit comfortably on either buttock and assumes a posture which is almost diagnostic. (Fig. 4.)

The swelling is quite immobile and tender on palpation. The systemic reaction is slight.

Treatment Immediate incision of the abscess should be made to prevent the burrowing of pus along the fascial planes, which would permit the development of complex fistulae. The abscess has its origin in an infected crypt, therefore the crypt must be excised for permanent relief.

The patient is placed in a lateral Sims' position or a lithotomy position. The perianal region is scrubbed, shaved and painted with an antiseptic solution. 1. A Brinkerhoff anoscope is gently introduced by maintaining the pressure away from the area of the abscess and the slot of the

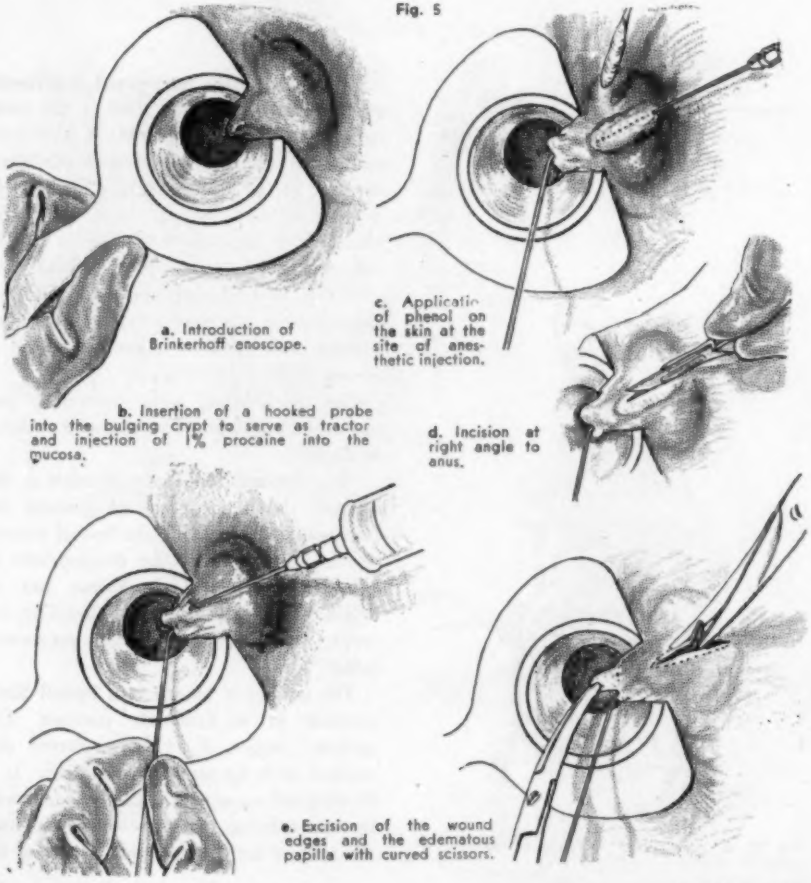
speculum is withdrawn. (Fig. 5a.) 2. A hooked probe is inserted into the bulging infected crypt. One percent procaine is injected into the mucosa around the opening of the crypt. (Fig. 5b.) 3. Pure phenol is applied over the abscess at the site of the anesthetic injection and the skin is anesthetized so that a welt of ¼-½ inch is formed over the entire length of the abscess. (Fig. 5c.)

After waiting 10 minutes an incision is made through the entire length of the abscess at a right angle to the anus. (Fig. 5d.) After removing the purulent material by suction or by sponging, the edges of the wound and the edematous papilla are excised. (Fig. 5e.)

A very loose light gauze drain is inserted gently and a sterile dressing is applied and held in place with a T binder. The patient is allowed to rest on the table for 5 minutes before being permitted to leave.

After treatment One tablet of morphine is prescribed every three hours for the day following the operation. A liquid diet is given for three days. The wound is dressed daily. Sitz baths taken twice daily for a half hour give great comfort to the patient. It is necessary to

Fig. 5



wash the area with luke warm boric solution after each bowel movement. About the third day after the operation when the wound starts to granulate all dressing is removed and only sanitary napkins should be applied. They make an easily obtainable and efficient protection for the wound. If drainage from the wound causes chafing, zinc oxide ointment should be applied to the site of irritation.

Ischiorectal abscess The pyramidal space lying between the anal canal and the tuber ischii is filled with fatty tissue, which does not offer any appreciable resistance to infection and permits through rapid necrosis the extension of the abscess along the wall of the rectum. This infection is associated with marked systemic reaction such as chills and fever.

Diagnosis The presence of a swollen, red extremely tender area beside the anus, the tenderness of which becomes excruciating with bowel movements, general malaise, and fever, and with the patient unable to walk or sit, is characteristic of ischiorectal abscess. (Fig. 6.)

Therapy Because of the fast progress of the infection due to the rapid necrosis of the fatty tissue in the ischiorectal fossa, immediate incision is the best treatment.

After the rectum has been flushed with boric acid solution the patient is placed in a lithotomy or lateral Sims' position with the involved side down.

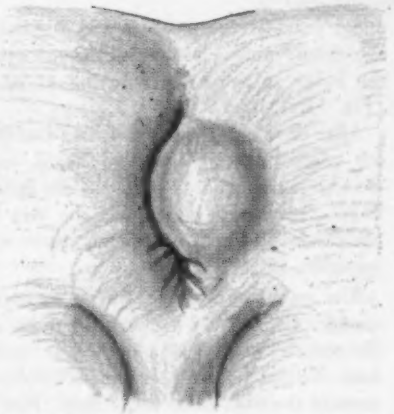


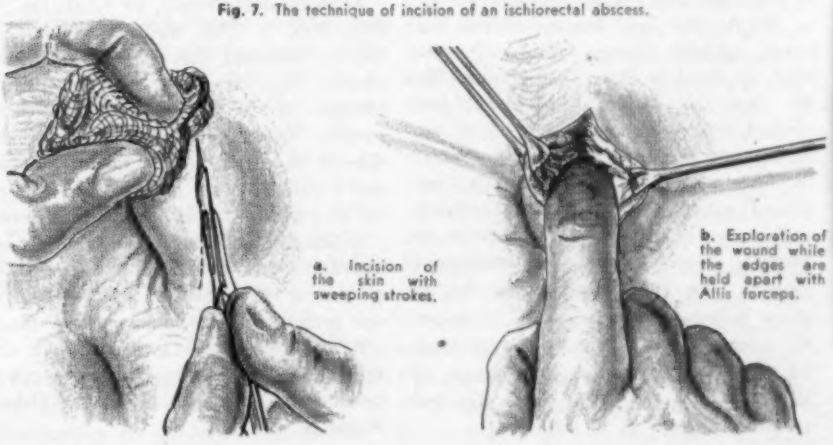
Fig. 6. The appearance of an ischiorectal abscess.

The preparing of the patient for the operation is identical with the method described in subcutaneous abscess. Only the skin over the abscess is anesthetized.

After the anesthetic has taken effect the gloved index finger of the left hand is inserted into the anus. The skin is cut through in an anteroposterior direction parallel to the anal slit with sweeping strokes, avoiding downward pressure upon the scalpel.

The purulent material in the abscess is

Fig. 7. The technique of incision of an ischiorectal abscess.



a. Incision of the skin with sweeping strokes.

b. Exploration of the wound while the edges are held apart with Allis forceps.

under considerable pressure and therefore one should hold a protecting sponge over the bulge to avoid the spraying of pus. (Fig. 7a.)

After the abscess is entered Allis forceps are placed upon the wound edges and the abscess is explored gently by the index finger, remembering that only the skin is anesthetized and the deeper structures are sensitive. (Fig. 7b.)

The cavity is cleaned with a gauze sponge. Care should be taken not to break the vessels which run like fibrous cords from the lateral wall of the ischiorectal fossa to the anal canal and rectum. Bleeding is controlled by crushing the vessels with a hemostat. Very loose iodoform gauze is inserted into the abscess cavity and left there for 24-48 hours. Over the iodoform gauze a dry dressing is applied and held in place with a T bandage. The cavity should never be packed tightly.

After treatment Sedation is prescribed. A hot water bottle is applied to the perineum. After removing the packing hot sitz baths 2-3 times a day are recommended and the area is cleansed after each bowel movement. Healing takes place within 2-3 weeks.

With ambulant treatment of the ischiorectal abscess no attempt can be made to incise and drain the infected crypt from which the abscess originated, consequently secondary fistula may develop which can be treated as described in the article on fistulae.

The deeper lying abscesses should be operated on in a hospital and no ambulant treatment of them should be attempted.

✚

Krebiozen in Cancer Control

A new drug, Krebiozen, extracted by a secret process from the blood serum of horses, has retarded cancer growth in 20 of 22 terminal cases. The drug was discovered by Dr. Stevan Durovic who brought into the country the only supply of the drug. The supply was turned over to Dr. Andrew Ivy, director of the National Advisory Cancer Council, for the study reported in *Drug Trade News* [*26:* 46 (Apr. 16, 1951)]. Anatomical and clinical evidence showed that 20 of the 22 patients gave evidence of improvement in their general condition, such as improved appetite, better mental outlook, and decreased pain, and a cessation or general regression in their malignant growth. One intramuscular injection is given followed by another in 72 hours. No further injections are given for from 14 to 30 days. There was no evidence of toxicity or side effects in patients who had received as many as 15 injections.

Dr. Ivy and others are very cautious in statements regarding results with this drug but they agree that the results are sufficiently promising to warrant further study.

Vitamin B_{12c} and B_{12d} in Pernicious Anemia

A preliminary report by Chalmers in *Brit. Med. J.* [No. 4699:161 (Jan. 27, 1951)] indicated that vitamin B_{12c} and vitamin B_{12d} are both hemopoietically effective in the treatment of pernicious anemia. Nine patients were given a single dose of 20 micrograms of the B_{12c} factor and 5 patients were given a like dose of the B_{12d} factor. All of the patients showed a striking clinical improvement with considerable relief of the glossitis and a reduction or elimination of subjective nervous symptoms. The observed red blood cell count compared favorably with the expected increase after 14 days as calculated from the Della Vida and Dyke's Formula.

Senator Love Reports from "God's Own Country"

June 3, 1951
Three Mile Harbor, East Hampton,
L. I., N. Y.

Arthur C. Jacobson, M.D.,
Editor-in-Chief MEDICAL TIMES
Dear Doctor:

My sincere congratulations to you and to my old colleague on the Resident Staff of the Cumberland Hospital, Ralph Lloyd, on your high class MEDICAL TIMES.

If either of you should be down here in "God's Own Country," I would be very glad to see you and sit with you on the beach by the ocean and recall with you "the days of yore." This is surely "God's Own Country" and the ideal spot in Eastern Long Island for septuagenarians to "retire" to.

Having just returned from the three-minute walk from my front door to the Inlet to Gardiner's Bay (where I had my "daily bath," bringing back with me three dozen clams), I am in the mood to send you the enclosed clipping from the East Hampton *Spray*, and also the Southampton *Times* in re the youngest appearing M.D. of 82 that I have ever met—and he is still "going strong." Some twenty years ago when I was a member of the State Senate, I owned a summer home in Greenport and met Dr. Lewis, who was then Coroner, as well as a busy and widely sought family doctor. I never in my life saw a popular and ultra-busy M.D. keep his "pep" and appearance as he has.

Cordially yours,
William Lathrop Love

Dr. Love Comments on Death of "Jimmy" Walker

Commenting on the death of the late ex-Mayor of New York City, Dr. William Lathrop Love of East Hampton (who served with him for ten years as a Member of the State Senate) said "Jimmie" Walker was the quickest thinker of any man I ever met. I hope the time will never come when I can't take a joke on myself and this surely is one. A "Freshman" Senator is supposed to "sit quiet" and "absorb" in his first month up on Capitol Hill. This was pretty hard on some of us—I think it may have been for me, but I managed to keep my mouth shut for the required thirty days. When I arose in the historic chamber to make my "maiden speech," duly impressed by the marble columns of the Capitol, as well as by the appearance of my colleagues — I alluded to "This august body." Quick as a flash "Jimmie" Walker chirped up and said "Well, if there are too many long speeches, it will be August before we get out of here." We became great friends, and he would allude to me as "the Physician of the Senate." Once, when he was quite sick, I attended him professionally and as there was a severe throat and nose complication, I recommended that Dr. J. Ivimey Dowling of Albany (well known in Bridgehampton) should be called in consultation. Specialist Dowling's batting average was so high, that two years after that, Jimmie traveled all the way from Havana, Cuba, especially to consult him.

I had another consultation in that case (unsought and unexpected) but it recalls an incident on Capitol Hill which shows that my old friend Governor Al Smith (who enjoyed life in Eastern Long Island as much as I do) was also "quick on the

trigger." One morning, as I was leaving Jimmie's sick room, the Governor entered, and in greeting me, said "How is your patient?" I replied "Best night he has had —he will be back in his old place in the Senate next week." "That's good news— I've come to see him with you in consultation," he informed me (in that voice of his that became so familiar over the radio). "Fine!" I responded, "but have you a license to practice medicine in this state?" Right "off the bat" he drawled in his inimitable way "I sure have—I always carry it with me!"—and with that, he pulled an old fishing license out of his pocket.

East Hampton *Spray*

Dr. Morley B. Lewis Honored at Bowden Square Birthday Party

A birthday party and reception by the Hampton Clinical Society was given last week at Herb McCarthy's Bowden Square, Southampton, in honor of Dr. M. B. Lewis' 82nd birthday anniversary.

At the guest table and making appropriate addresses were Dr. Lewis, Dr. Arthur Corwith, Dr. Fred Ritz, Dr. Leray Davis, Dr. John H. Nugent and Dr. William Gaynor. Dr. Corwith presided and introduced the speakers. All made stirring remarks as to Dr. Lewis' career of 55 years of active practice in this part of Long Island.

As a token of esteem, the society presented Dr. Lewis with a handsome leather wallet.

—Southampton *Times*

Terramycin Made Available For Arthritis Research

The antibiotic terramycin will be made available for widespread clinical research in the treatment of arthritis in the special dosage forms in which it has recently been found effective in the treatment of rheumatic diseases, John E. McKeen, president of Chas. Pfizer & Co., Inc., announced recently.

Requests from physicians and medical research centers for the special forms—which have potencies as low as one milligram of the antibiotic—were apparently stimulated by a report to the American Rheumatism Association by Dr. Thomas McPherson Brown, professor of medicine at The George Washington University School of Medicine, on the drug's effectiveness in alleviating rheumatic conditions.

In announcing the new dosage forms, Mr. McKeen said that they would be available to physicians for research purposes only. "The concept advanced by Dr. Brown and his associates indicated that wide-spectrum antibiotics may be beneficial in the treatment of rheumatoid arthritis. The particular success reported by Dr. Brown and other clinical groups treating rheumatic conditions with terramycin certainly justifies more extensive research. We hope that such research will produce results which will be of the greatest significance to millions of persons now suffering from rheumatic diseases. Chas. Pfizer & Co. welcomes the opportunity to be of assistance to the clinicians conducting research in arthritis and other rheumatic diseases."

The concept of terramycin-sensitive organisms as causative agents in rheumatic disease was developed by Dr. Thomas McPherson Brown and his associates at The George Washington University Hospital and the Mt. Alto Veterans' Administration Hospital in Washington, D. C.

A paper reporting their theory and the effectiveness of antibiotic therapy was reported before the annual meeting of the American Rheumatism Association on June 9, in Atlantic City.

Terramycin, an earth-mold drug, was discovered by a team of research scientists at the Brooklyn laboratories of the Pfizer company.

UROLOGY

AUGUSTUS L. HARRIS, M.D., F.A.C.S.*
Essex, Conn.

Hyperparathyroidism and Urolithiasis

D. E. Beard and W. E. Goodyear *(Journal of Urology,* 64:638, Nov. 1950) report that in 150 cases of renal and ureteral calculus, hyperparathyroidism was found in 12 cases, or 8 per cent. The diagnosis of hyperparathyroidism was made in these cases by daily determinations of serum calcium and phosphorus for three days, showing increased calcium (above 10.5 mg. per 100 cc.) and low phosphorus; and the demonstration of increased calcium excretion in the urine. The presence of osteitis fibrosa cystica is no longer regarded as necessary for the diagnosis of hyperparathyroidism, it was present in only one of the authors' 12 cases; a single bone cyst was found in 2 other cases, but in most of these cases no bone changes were present. A palpable parathyroid adenoma was demonstrated in only one case but a parathyroid tumor was found and removed in each case. On the basis of these findings the authors conclude that hyperparathyroidism is a "significant" cause of renal lithiasis; the reason why it is not more frequently demonstrated is that only cases with bilateral, multiple, or recurrent calculi are studied, whereas all cases of renal or ureteral calculi should be studied to determine whether hyperparathyroidism is present. In two-thirds of the series of cases reported, only a single calculus was present. The diagnosis of hyperparathyroidism depends upon the demonstration of hypercalcemia and hypophosphatemia together with hypercalcinuria, as in most cases there are few symptoms and these are not characteristic.

COMMENT

The authors have made a valuable contribution in their studies and results. Final proof of the relatively high incidence of hyperparathyroidism in calculous disease (8%) is the finding and removal of a tumor in the gland.

Many years ago, Drs. Barney and Churchill, of Boston, stimulated the interest of urologists in this subject in a report of cases. Thereafter, blood chemistry studies were performed widely in patients with urinary calculi. Results of these seemed to rarely indicate a parathyroid lesion.

It is certain that the Beard and Goodyear report will stimulate much wider routine studies for hypercalcinuria, hypophosphatemia and hypercalcemia. Thereby, parathyroid tumors will be found more frequently and removed.

A.L.H.

Spontaneous Disappearance or Retrogression of Bladder Neoplasm

B. S. Abeshouse and I. Sherlis *(Urologic and Cutaneous Review,* 55:1, Jan. 1951) report 3 cases of spontaneous retrogression or disappearance of a malignant bladder tumor following ureterosigmoidostomy in one case and bilateral cutaneous ureterostomy in 2 cases. They tabulate 6 other cases collected from the literature in which there was retrogression or disappearance of a malignant bladder tumor following bilateral ureterosigmoidostomy. In all these cases the retrogression of the

* Consulting Urologist, House of St. Giles the Cripple, Long Island College Hospital, St. John's Hospital, Brooklyn Thoracic Hospital, Brooklyn, N. Y.; Southside Hospital, Bay Shore, L.I., N.Y. Attending Urologist, St. John's Hospital, Brooklyn. Fellow of the American Urological Association.

tumor occurred at varying intervals (eight days to three months) after the diversion of the urine. While these cases suggest that this regression of the tumor was due to removal of a carcinogenic agent in the urine from contact with the bladder mucosa, the authors do not advocate the treatment of bladder tumors by diverting the urine by means of ureterosigmoidostomy or cutaneous ureterostomy. The spontaneous regression or disappearance of malignant bladder tumors is undoubtedly "a rare phenomenon."

COMMENT

All urologists are familiar with the striking retrogression of certain bladder tumors in patients after implantation of the ureters into the bowel. This is truly recession and not disappearance.

The writer has seen but one instance in which the entire neoplasm disappeared after high-voltage x-ray therapy without surgery.

A.L.H.

The Clinical Use of NU-445 (Gantrisin) in the Treatment of Urinary Tract Infections

B. L. Stewart and J. J. Lash, *(Journal of Urology*, 64:801, Dec. 1950) report the use of 3,4-dimethyl-5-sulfanilamido-isoxazole (NU-445 or Gantrisin) in the treatment of 100 cases of urinary tract infection. Gantrisin has the advantage of being highly soluble at pH 6.0 to 7.5, a physiologically important range. The cases treated included acute and chronic cystitis and pyelonephritis, and infected hydronephrosis; in a number of cases the organic lesions found made the outlook for chemotherapy apparently unfavorable. Gantrisin was given in doses of 4 Gm. daily to adults, in four divided doses, until a total of 25 Gm. had been given, and in doses of 2.5 Gm. daily to children, in five divided doses, until 20 to 25 Gm. had been given. Nine patients were given a second course of treatment. In these 100 cases, 111 micro-organisms were isolated; 35 of these micro-organisms from 33 patients were not well controlled by Gantrisin; 14 of these were completely resistant to the drug, and 21 occurred in relapses after completion of treatment. Gantrisin was found to be effective in controlling infections of the urinary tract due to *E.coli, P. vulgaris, P. aeruginosa* and gram-positive cocci in this series of cases; it was effective against a number of bacteria against which other sulfonamides are not effective. A clinical cure of the urinary tract infection was obtained in 67 of the 100 cases, with only minimal side reactions and no case of sulfonamide crystalluria.

COMMENT

Since the report of Stewart and Lash, extensive use and clinical trial of Gantrisin has confirmed the author's results.

The absence of crystalluria and the usual good tolerance of patients to the drug are its chief advantages. The reviewer, after using it repeatedly, as well as the other sulfa compounds, is not convinced that it has greater bacteriostatic or bactericidal properties.

It is fortunate, indeed, that the predominating organism in the urinary tract is of the B. coli group, which responds so well to sulfa. Again the larger doses, so often employed, are not always necessary or advisable, since the drug concentrates so well in the urine.

It must be repeatedly emphasized that the various obstructive and 'mechanical' lesions of the urinary tract are not to be carelessly overlooked by failure to do diagnostic studies.

It hardly seems necessary to remind physicians that the new antibiotics are most important aids, along with sulfa, especially in the more resistant types of infection.

A.L.H.

Surgical Management of the Painful Bladder

J. P. Bourque *(Journal of Urology*, 65:-25, Jan. 1951) describes an operation for the relief of painful bladder due to various causes—including Hunner cystitis or interstitial cystitis, chronic cystitis with contracted bladder, and painful bladder associated with renal tuberculosis, sometimes persisting after nephrectomy for unilateral renal tuberculosis. In all these cases there is frequency of urination as well as pain. The operation employed by the author for the relief of pain and frequency consists in presacral neurectomy and bilateral section of the hypogastric

nerves and of the erector nerves including the hypogastric ganglion. In cases in which the complete operation was done there was complete relief of pain and frequency; at the time of discharge from the hospital, urination occurred at regular intervals of one to three hours, depending on the capacity of the bladder before the operation; the patients were free from pain and all had complete urinary control, with neither incontinence nor residual urine. In cases in which the operation was not complete, i.e., unilateral hypogastric neurectomy or unilateral erector neurectomy, partial but not complete relief was obtained. The sexual impulses were modified in all cases and often abolished. In cases in which the patient with painful bladder is a poor risk for operation, infiltration of the hypogastric ganglion with novovain, or if necessary with 95 per cent alcohol for a longer effect, is indicated. For this procedure the author employs the sacral route and the technique described by Darget and Chenillean. This procedure may also be used as a preoperative test, as indicating results that may be expected from the operation.

COMMENT

The writer has had no experience with presacral neurectomy or bilateral section of the hypogastric nerves and ganglion.

Extremely irritable contracted bladder, such as found in advanced tuberculosis, Hunner ulcer, and deep intramural cystitis, often causes untold suffering. The urologist may fail in all his efforts to provide relief. It is in this type of case that nerve surgery may prove beneficial.

One great handicap in the procedure is that it frequently causes impotence. Unfortunately, the lesions are those found common to people of younger age.

The reviewer would like to know if it isn't possible for sectioned nerve structures to regenerate with resultant recurrence of pain.

A.L.H.

Epididymitis in Mumps, Including Orchitis

S. Candel (*Annals of Internal Medicine*, 34:20, Jan. 1951) reports a study of 66 cases of mumps orchitis, in 12 of which the orchitis was bilateral. Of the 78 involved gonads, 67, or 85 per cent, showed inflammation and enlargement of the epididymis; in 18 cases the swelling was slight; in 44, the size of the epididymis was two to four times the normal, and in 5 cases six to twelve times the normal. Often it is not difficult to determine the involvement of the epididymis, but if the gonad is much swollen, it may be difficult to outline the testis and the epididymis separately; this can be done by daily palpation as the inflammation begins to subside. In the author's study of the 66 cases, he obtained the impression that the swelling of the testis began to subside before the swelling of the epididymis. The chief symptoms of epididymo-orchitis in these cases of mumps were tenderness, pain and swelling or induration; pain and swelling disappeared fairly promptly after the temperature became normal, but tenderness persisted, in several cases, many days longer than the other symptoms. On discharge from the hospital, enlargement and thickening of the epididymis, without pain, was present in 19 cases. The most prominent sign of involvement of the gonad at the time of discharge was the loss of turgor of the testicle, which was noted in 35 tests, or 44.9 per cent of the gonads involved; evidence of atrophy of the testis was found in only 4 cases at this time. If atrophy of the testes occurs after mumps epididymo-orchitis it is evident that it is a progressive process, continuing after the patient is free from symptoms and is discharged from medical care. The fact that epididymitis occurred in so large a percentage of the cases of mumps orchitis in the author's series is of importance, as it is frequently overlooked and its real importance is not recognized. In the treatment of mumps, the injection of gamma globulin from convalescent serum has been found to reduce the incidence of epididymo-orchitis, but when the gonad has become involved, the treatment is entirely symptomatic—

including rest in bed, elevation of the testis, use of an ice bag, and salicylates and codeine sulfate to relieve pain. Sterility probably does not often result from mumps orchitis; in cases in which sterility does occur, more attention should be paid to the epididymis as the possible "offending factor."

COMMENT

It is worthy of note that Candel has found definite epididymitis along with orchitis after mumps, in practically all cases. This would seem to be contrary to the general teaching of the past. The alert pediatrician should be in a position to observe larger numbers of this complication than urologists, general practitioners, or any other group; and to follow them as the author has done.

The reviewer does not know if reliable statistics are available on the incidence of sterility after (mumps) epididymo-orchitis. Contrary to the author's statement of the low incidence, I have had the impression it was quite high.

Candel's finding of the reduced occurrence of orchitis after the prophylactic use of gamma globulin (from convalescent serum) in mumps should be universally stressed, especially among pediatricians and medical men. We have seen, in adults, not infrequent evidence of late testicular atrophy.

A.L.H.

Brucellosis of the Urinary Tract

L. F. Greene and D. D. Albers *(Proceedings of the Staff Meetings of the Mayo Clinic*, 25:638, Nov. 8, 1950) report 2 cases of brucellosis of the urinary tract seen at the Mayo Clinic in 1947 and 1948. The symptoms resembled those of tuberculosis of the urinary tract, but cultures of the urine and guinea-pig tests were negative for tuberculosis. The diagnosis was finally established by finding Brucella in cultures of the urine, *Brucella melitensis* in one case and *Brucella suis* in the other. Treatment with sulfadiazine (4 to 6 Gm. daily) and streptomycin (1.2 Gm. daily) or dihydrostreptomycin (2.4 Gm. daily) relieved the symptoms and rendered the urinary cultures negative for Brucella. Treatment was continued for two weeks in one case and for twenty-six days in the other. Since that time it has been found that a more effective treatment for brucellosis of the urinary tract is the combination of aureomycin (750 mg. every six hours) and dihydrostreptomycin (1 Gm. every twelve hours), treatment being continued for three to four weeks.

COMMENT

This contribution is of particular importance to the urologist. He must be on his guard for a patient with symptoms suggestive of urinary-tract tuberculosis. This rare condition can be diagnosed by the culture revealing Brucella and satisfactorily treated by the combined use of aureomycin and dihydrostreptomycin.

A.L.H.

OPHTHALMOLOGY

RALPH I. LLOYD, M.D., F.A.C.S.*
Brooklyn, N. Y.

Local Use of Cortisone in Ophthalmic Disease

H. A. Mosher *(A. M. A. Archives of Ophthalmology*, 45:317, March 1950) reports 53 cases of various types of ocular disease treated locally with cortisone. The local treatment was employed in these cases because treatment could be continued as long as indicated without danger of reactions such as occur with the systemic administration of cortisone or ACTH. Also hospitalization of patients is not necessary with local treatment and the cost to the patient is less. Cortisone was given both by subconjunctival injection and as a collyrium. For subconjunctival injection, local anesthesia with co-

* Consulting Ophthalmologist, Cumberland, Prospect Heights, Brooklyn Eye and Ear, Long Island College and Peck Memorial Hospitals, Brooklyn.

caine was employed; each cc. of solution contained 25 mg. of cortisone acetate; it was found that injection of 7.5 mg. or less of cortisone caused little or no pain, but 12.5 mg. or more often caused considerable discomfort. Injections were repeated, when necessary, at intervals of two weeks. For the collyrium each cc. of the suspension used contained 5 mg. of cortisone acetate. Patients using the collyrium were instructed to use one drop every hour when awake, at first. Later the interval was gradually increased. As the collyrium was found to be more effective than the subconjunctival injections, it was employed in the majority of the cases (33 cases). Cases of superficial punctate keratitis, sclerokeratitis, relapsing keratitis and bullous keratitis showed a favorable response to the cortisone collyrium; there was prompt relief of pain, photophobia and itching often associated with these forms of keratitis. Some cases of uveitis cleared up under local cortisone treatment, but 3 of 12 patients with uveitis showed no improvement. Cases of rodent ulcer of the cornea and Eales' disease and one case of severe chorioretinitis showed no response to the treatment. Two patients who had developed sensitivity to atropine and scopolamine were able to continue treatment with these drugs when the cortisone collyrium was also employed.

COMMENT

The production of cortone in quantity has made it possible for many oculists to use the drug and build a large mass of case reports from which to classify the types of cases which respond, to learn the best method of administration and to avoid some of the unpleasant effects.

R.I.L.

Aureomycin in Trachoma

M. A. Shah *(British Journal of Ophthalmology,* 35:50, Jan. 1951) reports the use of aureomycin in the treatment of 53 cases of trachoma, in all of which pannus was present. In 61 cases, the pannus was the fine type (pannus tenuis) and in the remainder, the coarse type (pannus vasculosus). The majority of the patients showed the second stage of trachoma, the remainder the third stage (according to McCallen's classification). Aureomycin hydrochloride was used in a borate solution, fresh supplies of the solution being made up every forty-eight hours and kept on ice. A drop of this solution was instilled into each eye every two hours, day and night, except between midnight and 6 a.m. In most cases treatment was continued for eight to fourteen days. In all but 2 cases, there was marked improvement in the symptoms of trachoma, but regression of the pannus was demonstrated in only 6 cases, and the pannus did not disappear entirely although treatment was continued as long as twenty-nine days in one case. Others, reporting smaller series of cases, have noted the regression of the pannus more frequently under aureomycin treatment.

COMMENT

Trachoma is such a rarity today in the United States that a long time would elapse before any clinician would see enough cases upon which to base conclusions. The sulfa drugs had achieved such favorable results before the mycin groups appeared, that they still are regarded as the best remedies for all phases of trachoma.

R.I.L.

Osteoma of the Orbit

A. B. Rizzuti *(American Journal of Ophthalmology,* 34:49, Jan. 1951) reports a case of true osteoma of the orbit and presents a review of the literature showing that it is a rare type of orbital tumor. Osteomas of the orbit grow slowly and may not cause serious ocular symptoms until the tumor is so large as to produce a pronounced exophthalmos with resulting keratitis lagophthalmos, accompanied by pain and inflammatory changes, as in the case reported by the author. In this case a diagnosis of osteoma of the orbit was made by x-ray examination and the tumor was removed through an anterior orbital approach. The patient made a good recovery and the proptosis had practically

disappeared a month after operation with normal visual function in the involved eye. On the basis of the findings in this case and the review of the literature, the author emphasizes the necessity for early operation in cases of osteoma of the orbit to prevent late ocular complications and sequelae; he considers the anterior orbital route to be "the most practical surgical approach" in removing this tumor.

COMMENT

The ethmoido-orbital osteoma very often enters the cranium pushing nasal epithelium into a pocket of meningeal tissue. The growth is so slow that this seemingly impossible condition is created and a cholesteatomatous accumulation follows. If the meninges are perforated, this opening must be closed by fascial tissue to obviate infection after the bony tumor is removed. If the operation is performed early as in this case, this hazard is eliminated.

R.I.L.

Clinical Trial with Chloramphenicol in Ocular Infections

I. H. Leopold *(A. M. A. Archives of Ophthalmology,* 15:44, Jan. 1951) reports the use of chloramphenicol in various types of ocular infections; for local treatment a solution of 2.5 mg. per cc. was employed. In conjunctivitis local treatment alone was employed; of 103 eyes treated 71 showed definite improvement. In keratitis the local treatment was combined with the administration of chloramphenicol by mouth; of 33 eyes, 22 showed definite improvement with this treatment; in 8 eyes with dendritic keratitis, all cleared up (as shown by absence of staining) within six to seven days. Combined local and systemic treatment with chloramphenicol, however, did not prove effective in uveitis. In 3 cases of intra-ocular infection, chloramphenicol given systemically resulted in clearing up the infection. Local treatment alone was of value in the treatment of both acute and chronic dacrocystitis. Fifteen patients with herpes zoster ophthalmicus responded favorably to chloramphenicol given by mouth, but as the cause of this disease is "notoriously variable," no definite conclusions can be drawn as to the real value of chloramphenicol from this small series of cases; the results are "only suggestive." Toxic reactions to chloramphenicol were few and comparatively slight; the treatment was stopped in only one case because of gastrointestinal symptoms; signs of local sensitivity developed in 2 eyes; and one patient had a reaction of the serum sickness type. It has been definitely demonstrated that chloramphenicol given systemically penetrates into the intra-ocular fluid and is effective in the treatment of intra-ocular infections due to organisms susceptible to this antibiotic.

COMMENT

It is evident that antibiotics have selective actions which must be thoroughly explored to obtain the best results. The importance of virus infections is also a complicating factor as previous ideas of treatment and etiology of disease assumed a bacterial origin. These ideas must now be overhauled and a new set of precepts organized.

R.I.L.

Experimental Studies on Early Lens Changes After Roentgen Irradiation

L. von Sallmann *(A. M. A. Archives of Ophthalmology,* 45:149, Feb. 1951) reports experiments on the effect of roentgen irradiation on the eyes of adult rabbits. In some experiments a single dose of 2000r of penetrating roentgen rays was employed, and in others a dose of 1000r was given twice at intervals of one week or three weeks. In 53 of the 56 eyes given the 2000r in a single dose, ophthalmoscopic examination showed cataractous opacities in four to ten weeks after irradiation; these opacities developed at the equator of the lens and progressed in the posterior and then in the anterior cortex. Histological studies showed that the first pathological change was in the nuclei of the lens epithelium, in the bow and the preequatorial zone. Swelling and disorganization of the lens fibers did not usually take place until after the degenerative changes in the cell nuclei were ad-

vanced, but in 6 eyes extensive cystic formations were observed in the subcapsular ends of the fibers of the lens within four weeks after irradiation. In the cases in which the 2000r dosage was given in two doses, the onset of the cataractous changes was delayed, the period of delay being longer when the interval between doses of radiation was three weeks, than when this interval was one week, but in most instances in which this interval was one week, total cataract developed within a few months, although this was not the case when the interval was three weeks.

COMMENT

X-rays are used infrequently in eye diseases. Tuberculous chorioretinitis and glioma (bilateral) in children are the most common conditions calling for their use. X-ray therapeutists have been successful in avoiding complications. Beta radiation is coming into much greater use.

R.I.L.

The Ocular Complications of Erythema Exudativum Multiforme

J. W. Duggan and S. R. Gaines *(American Journal of Ophthalmology,* 34:189, Feb. 1951) report that in a series of 47 cases of erythema multiforme at the Charity Hospital of Louisiana, 11 showed ocular involvement; this is a lower incidence of ocular involvement than is reported by others. Four of these 11 cases are reported in detail; and another case from another hospital is also reported. In the series reported, as in those reported by others, the conjunctiva is most frequently involved in erythema exudativum multiforme. In the 4 cases reported in detail, 2 showed a catarrhal conjunctivitis and 2 a purulent conjunctivitis. Pseudomembranous conjunctivitis occurs less frequently in this disease. Serious sequelae of the conjunctivitis were not observed in the cases reported. The fifth case reported (from another hospital) is of interest because the cornea was involved, with deep annular corneal ulcers and haziness in the central areas in both eyes. There was considerable impairment of vision, until superficial x-rays were employed in treatment in a dosage of 75r unfiltered, for five treatments. This resulted in healing of the corneal ulcers and rapid improvement in visual acuity. In the cases of conjunctivitis no treatment proved very satisfactory; 2 of 4 cases reported "seemed" to improve after treatment with sulfadiazine, but one showed similar improvement without treatment, and in the fourth case, no treatment had any definite effect, although recovery occurred without ocular sequelae.

COMMENT

So rare is this disease in this vicinity that we must look to groups of clinicians who see relatively large numbers of such cases.

R.I.L.

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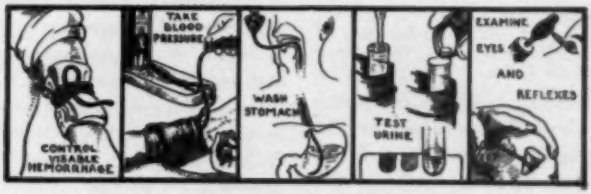
Clini-Clippings



Emergency treatment of coma.

From Larkowski and Rosanova's "Hospital Staff and Office Manual."

MEDICAL BOOK NEWS

Ophthalmic Surgery

Principles and Practice of Ophthalmic Surgery. By Edmund B. Spaeth, M.D. 4th Edition. Philadelphia, Lea & Febiger, [c. 1948]. 8vo. 1,044 pages, illustrated. Cloth, $15.00.

This book is a pretty comprehensive compendium of Ophthalmic Surgery, and has been a most satisfactory reference volume from the time of the first edition. It describes in more detail than any other contemporary work, the indications, technic, aftercare and complications of most operative procedures on the eye.

The fourth edition naturally contains all of the material found in the first and successive editions, with further expansions and additions to bring it up to date. Besides fresh material on Muscles, Ptosis and Exophthalmos, the Surgery of Enucleation has been rewritten, in view of the recent work on Plastic Implants. This book will continue to be invaluable to the student of Ophthalmology as well as to the practicing Ophthalmic Surgeon.

E. CLIFFORD PLACE

Medical Gynecology

Medical Gynecology. By James C. Janney, M.D. 2nd Edition. Philadelphia, W. B. Saunders Co., [c. 1950]. 8vo. 454 pages, illustrated. Cloth, $6.50.

A good addendum to the easy reading type of text book is presented by Dr. Janney with the second edition of *Medical Gynecology*. The approach to the problems of gynecological diagnosis from a meticulous evaluation of the patient's complaints is commendable. The illustrations are adequate to support the deductions arrived at by clinical scrutiny of symptoms. The chapters devoted to artificial insemination, birth control, and other medical-moral questions, are interesting, but highly controversial. While endeavoring to limit the scope of his book to office gynecology, the author's treatment of the broader aspects of accepted gynecological knowledge is necessarily fragmentary and incomplete.

ALFRED A. SCHENONE

Biography

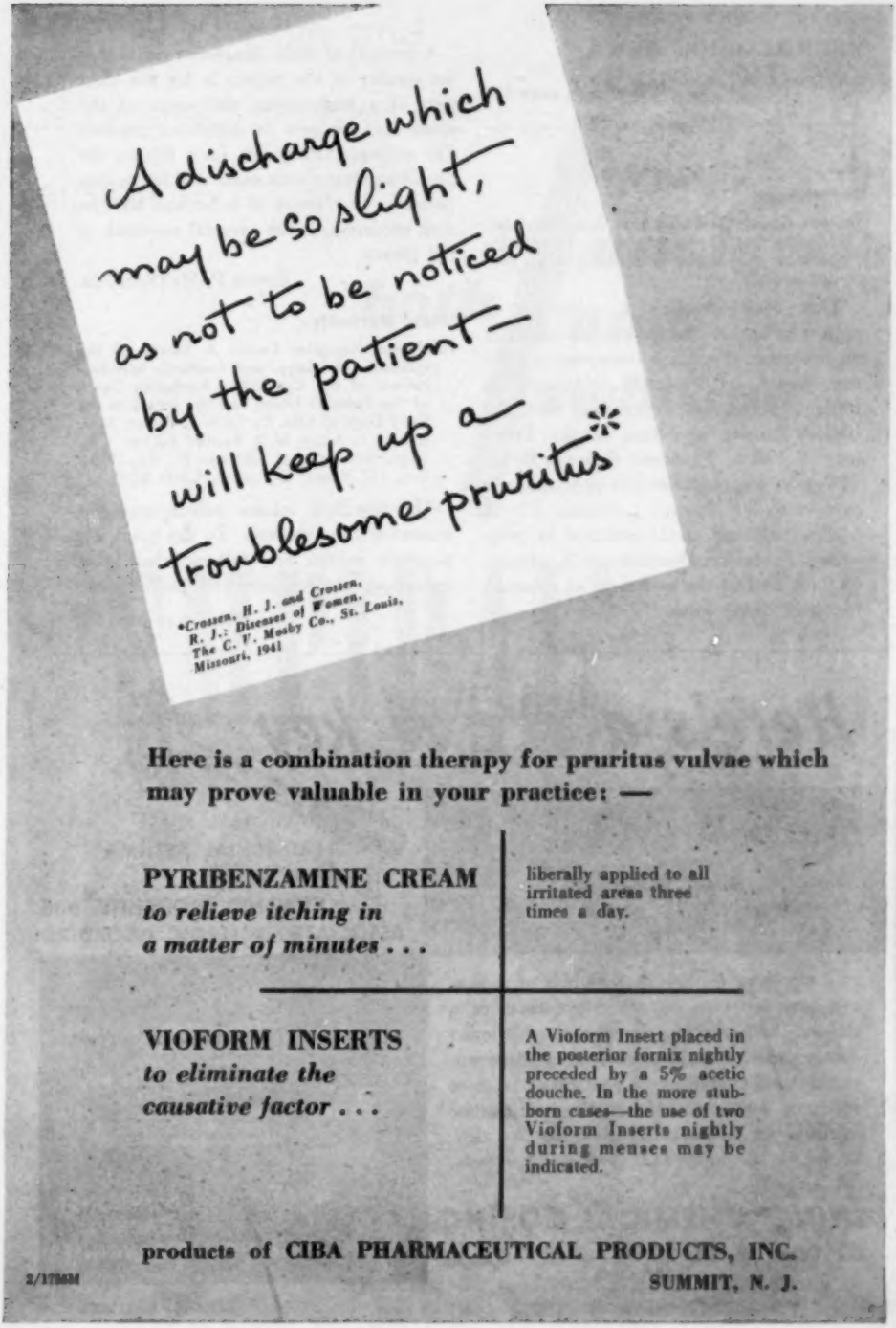
Friend of the People. The Life of Dr. Peter Fayssoux of Charleston, South Carolina. By Chalmers G. Davidson, Ph.D., Columbia, S. C., Medical Association of South Carolina, [c. 1950]. 12mo. 151 pages. Cloth, $2.75.

Mr. Davidson has portrayed the life of a physician who was politician and patriot as well. The book gives an interesting insight into the conditions and legislation of the post Revolutionary War days.

There is evidence throughout the text of considerable research. This has been gathered with infinite care and attention to detail. A comparison of conditions of that period as described in the book and those of today show some surprising similarities and variations. On the whole it is an interesting story of an intelligent man's loyalty to his people.

JEROME WEISS

—Continued on page 526



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MEDICAL BOOK NEWS

—Continued from page 524

Cardiology

Thérapeutiques Cardiologiques Internationales. Edited by Prof. Camille Lian. Paris, L'Expansion Scientifique Française, [1950]. 8vo. 169 pages.

This book contains a collection of papers by authors from different countries on problems of cardiac therapeutics. The first paper, by Professor D'Allaines of Paris, recounts his experiences with the Blalock-Taussig operation in the Tetralogy of Fallot. Professor Georges Bickel of Geneva discusses the role of vitamins in cardiovascular therapy; vitamin B1 in beriberi, chronic alcoholism and in pregnancy. Professors Donzelot and Kaufmann of Paris outline the treatment of subacute bacterial endocarditis.

A perusal of these chapters reveals that the quality of the papers is for the most part of a high order, and some of the ideas may be new to American readers. For example, Professor Lian injects the preaortic plexus with novocaine for angina pectoris. If a series of injections fails he then recommends the surgical resection of the plexus.

EDWIN P. MAYNARD, JR.

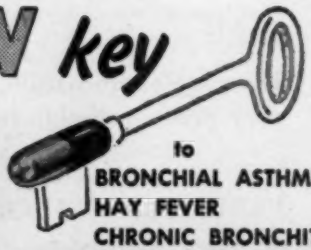
Infant Mortality

Fetal and Neonatal Death. A Survey of the Incidence, Etiology, and Anatomic Manifestations of the Conditions Producing Death of the Fetus in Utero and the Infant in the Early Days of Life. By Edith L. Potter, M.D. & Fred L. Adair, M.D. Revised Edition. Chicago, University of Chicago Pr., [c. 1949]. 8vo. 173 pages, illustrated. Cloth $3.75.

This fine little volume well deserves the success it has achieved. To the point, engagingly written, and full of valuable information, obstetricians and pediatricians

—Concluded on page 528

Here's a NEW key



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BRONCHIAL ASTHMA
HAY FEVER
CHRONIC BRONCHITIS and
ASSOCIATED ALLERGIC DISORDERS

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Phenobarbital sodium 1/8 gr.
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Warning: May be habit-forming.
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Ephedrine HCl ..... 1/8 gr.
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MEDICAL BOOK NEWS

—Concluded from page 526

alike have found it useful. The eminence of Edith Potter in the field of pathology makes this work authoritative. It is highly recommended for wider circulation.

CHARLES A. GORDON

Physiology of Vision

Researches in Binocular Vision. By Kenneth N. Ogle, Ph.D. Philadelphia, W. B. Saunders Co., [c. 1950]. 8vo. 345 pages, illustrated. Cloth, $7.50.

Dr. Ogle's monograph on binocular vision is a résumé of very fine studies well presented and based on not only the work which he and his group have been engaged in, but also the work of others. The volume is rather technical but nevertheless has many clinical applications which modern ophthalmologists cannot afford to overlook. The work is particularly valuable for those interested in advanced visual physiology.

JOHN N. EVANS

Anatomy

An Atlas of Human Anatomy. By Barry J. Anson, Ph.D. Philadelphia, W. B. Saunders Co., [c. 1950]. 4to. 518 pages, illustrated. Cloth, $11.50.

This volume is based upon original dissections and accurate study of numerous specimens extending over a number of years. The dissected parts are well illustrated. Variations from normal anatomy and their incidence are well presented. This atlas should be of great value to the student of anatomy, as well as to the practicing physician and surgeon.

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improves the whole patient in hypertension

PERTENAL

controls pressure and symptoms that send pressure soaring

more normal pressure
around the clock with two potent vasodilators.

eases stress on heart
by decreasing peripheral resistance.

relieves gastro-intestinal spasm
pain and other discomforts which aggravate pressure.

relaxes patient
mentally, physically; allays tension, worry, restlessness, insomnia.

from the first day of PERTENAL
therapy the whole patient is more comfortable, happier; able to live a more normal, perhaps longer life.

Each PERTENAL tablet contains:

Veratrum Viride	100 mg. (1½ gr.)
Homatropine Methyl Bromide	2.5 mg. (1/25 gr.)
Mannitol Hexanitrate	30 mg. (½ gr.)
Phenobarbital	15 mg. (¼ gr.)

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- such control of staining
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in **gentian violet** therapy

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single-dose disposable applicators

a 2 year study[1] at Margaret Hague Maternity Hospital clearly proved **gentia-jel** a most effective, convenient, safe form of gentian violet. Single-dose disposable applicators deposit **gentia-jel** jelly **inside** vaginal tract with a minimum of staining, soilage, fuss.

Safe, non-irritating, for home use even through late pregnancy.

93% combined cure and improvement...used during the last trimester of pregnancy **gentia-jel** cured 149 (78%) of 191 women with vaginal mycosis...most within 2 weeks. Combined cures and improvement totalled 93% of all cases. Itching, burning and other symptoms were largely controlled within 48 to 72 hours.

Formula: 0.2% gentian violet, 3% lactic acid, 1% acetic acid in a water-soluble polyethylene base.

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DIVISION OF FOSTER-MILBURN CO.
468 Dewitt Street, Buffalo 13, N.Y.

1. Waters, E. G., and Wager, H. P.: Amer. J. Obstet. & Gyn. 60:885, 1950.

LETTERS TO THE EDITOR

—Continued from page 40a

sibly toxic (vestibular) labyrinthitis or neuritis.'

"This might prove of interest or value to Dr. Atkinson and your readers."

M. B. Levin, M.D.
Baltimore, Maryland

June 23, 1951

"I return Dr. Levin's letter, as requested. Thank you for letting me see it before publication.

"You don't ask for comments, but here are some in case you want them.

"1. Dr. Levin apparently makes no distinction between Ménière's syndrome and the effects of poisons, organic or inorganic, on the vestibular tract, but lumps them all together under one common diagnostic heading. As I tried to stress in my article, the essence of successful treatment in this, as in any other disease, is accurate diagnosis. Even the commonly used term, Ménière's syndrome, is used to include two types of attack, as I pointed out, and to include therewith toxic manifestations on the vestibular mechanism, without differentiation, only compounds confusion.

"2. The treatment he recommends with atropine and stramonium is directed towards effects (symptoms), not cause, and, if my thesis of vitamin deficiency as the basic cause is correct, could have only temporary effect. One of the great difficulties in assessing the value of any treatment of this condition is its notorious tendency towards remission, so that one is always faced with the question—did the treatment given actually control the attacks or did

—Concluded on page 58a

a most significant advance

TROMEXAN T. M.

ethyl acetate

new, safer, oral anticoagulant

Throughout the exhaustive studies on TROMEXAN, involving many hundreds of cases, this new anticoagulant has proved singularly free from the dangers of hemorrhagic complication. Other advantageous clinical features of TROMEXAN are:

1 ***more rapid therapeutic response***
(therapeutic prothrombin level in 18-24 hours);

2 ***smooth, even maintenance of prothrombin level***
within therapeutic limits;

3 ***more rapid return to normal***
(24-48 hours) after cessation of administration.

In medical and surgical practice . . . as a prophylactic as well as a therapeutic agent . . . TROMEXAN extends the scope of anticoagulant treatment by reducing its hazards.

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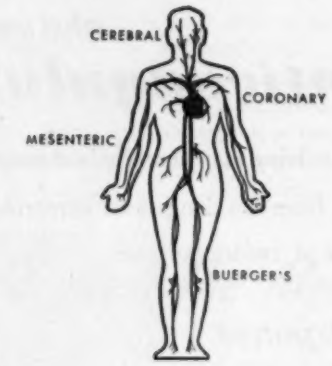
NOW AVAILABLE

A Long-Sought Medication
For Arterial Disease

CACODYNE

AN ISOTONIC COLLOIDAL
IODINE CACODYLATE



CACODYNE CREATES CARDIAC RESERVE

It offers more than temporary relief. The improvement is sound and takes the patient out of the danger zone.

For intramuscular or intravenous injection.

Frequency of administration is reduced with improvement and gradually withdrawn when symptom-free.

Symptom-free periods of 10 years and longer.

No self-medication; no known contraindications.

Extraordinary and challenging recoveries made when other therapy failed.

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RESEARCH MEDICATIONS, INC.

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LETTERS TO THE EDITOR

—Concluded from page 56a

they cease temporarily of their own accord?

"3. Thiamine chloride in the doses recommended, i.e., 100 to 500 mg. three times a day, is dangerously high, and I say this even though I am an advocate of high-vitamin dosage. Many patients would not tolerate even a fraction of this amount, while there are a few who are sensitive to thiamine and might well be thrown into dangerous anaphylactic shock. Anyone prescribing thiamine should bear this fact in mind and be correspondingly careful of the initial dosage.

"Thank you again for letting me see the letter."

Miles Atkinson, M.D.
New York, N. Y.

ARTICLES PRAISED

"I find all the papers and reports in the MEDICAL TIMES well worth my time in reading them."

J. EDISON GOLDSMITH, M.D.
Beverly Hills, Calif.

". . . I like the type of medical writing in MEDICAL TIMES because it gets the idea over, is understandable, complete yet not wordy, and saves both my time and printer's ink. I believe that this sort of thing, especially the collection of pertinent data into your reprints, is a real service.

"It is indeed difficult to keep up to date because the vast majority of medical writing is relevant opinion about what we already know, or a silly rush to print by some specialist for reasons of priority or prestige and most of it never should be honored with printer's ink—yet to keep up to date one must winnow all this chaff to find the few grains. . . ."

Emery R. Ranker, M.D.
Oakland, Calif.

For GOOD HEALTH, VIGOR and USEFULNESS In Later Years

Today, with the life span on the increase, there is greater need than ever to supply elderly people with foods that help increase their vigor and usefulness.

Hot Ralston and Instant Ralston furnish notable amounts of thiamine and iron—factors inadequately supplied by the diets of many oldsters. A *single* serving provides 0.425 mg. thiamine, 8.49 mg. iron — and 3.5 Gm. essential protein.

These delicious, satisfying, enriched whole wheat cereals also supply niacin, riboflavin and other B-vitamins . . . provide the *gentle* peristaltic stimulation so many old folks need.

Cooks in 10 seconds

Cooks in 5 minutes

Many of your older patients with limited incomes will be glad to know that a generous serving of Hot Ralston or Instant Ralston costs only 1-1½¢.

Instant Ralston and Hot Ralston are useful in preventive geriatrics too!

MODERN THERAPEUTICS

Pruritus Ani Treated with My-B-Den

Thirty-five patients suffering from idiopathic pruritus ani were injected with My-B-Den® and 79% were relieved either permanently or temporarily (ten cases reporting recurrence within 3 weeks to eight months after injection).

Twenty-five additional patients were used as controls and given saline injections and 44% reported relief of only short duration.

Of 9 patients who did not respond to saline, 6 were then relieved on treatment with My-B-Den.

Dr. John G. Matt, writing in the June, 1951, issue of the *Southern Medical Journal*, reports that My-B-Den caused a striking change in the condition of the perianal skin which rapidly lost its grey, soggy, fissured appearance to become normal in appearance and texture.

All cases were screened to exclude patients with (1) history of allergy, (2) evidence of ano-rectal disease, (3) parasites in stools, (4) positive urine sugar tests, and (5) recent treatment with aureomycin.

Streptomycin in the Treatment of Tuberculosis

A controlled study of the use of streptomycin in the treatment of pulmonary tuberculosis was performed on 541 cases. The patients were divided at random into two groups. All of the patients received any form of conventional therapy or surgery which the physician in charge felt necessary. The variable was the institution of streptomycin therapy in one group. This group received 20 mg. of streptomycin per Kg. of body weight for 91 days.

The two groups were compared on the basis of temperature, body weight, bacteriological status, amount of sputum and x-ray change at the end of 3, 6, 9 and 12 months. At each of the comparison times, the differences between the two groups showed superiority for the streptomycin group in all categories, but the difference became less marked as time went on, according to a report by Long and Ferebee in *Pub. Health Rep.* [*65*: 1421 (1950)]. The authors suggested that the cases may have been divided into three categories; those who were going to improve, those who were going to deteriorate, and those who were doubtful, and that the addition of streptomycin may have speeded the improvement among the patients in the first category, slowed the deterioration in the second, and swung many doubtful cases over into the improved category.

Therapy of Relapsing Vivax Malaria

Chloroquine phosphate was given to 49 patients with relapsing vivax malaria in an initial dose of 0.6 Gm. of chloroquine base followed by 0.3 Gm. in six hours and on the 2nd and 3rd days. Pentaquine phosphate was given to 50 similar patients in a dose of 10 mg. of pentaquine base every 8 hours along with 0.6 Gm. of quinine sulfate, for a period of 14 days.

Only 1 of the 50 patients treated with pentaquine had a relapse during the 115-day follow up period while there were 22 relapses in 17 of the 49 patients treated with chloroquine. The average number of relapses prior to treatment in the pentaquine group was 4.8 and in the chloroquine group 5.5. According to Straus and Gennis in *Ann. Int. Med.* [*33*:1413 (Dec., 1950)] toxic manifestations were insignificant with both drugs in the dosages employed.

—Continued on page 62a

rapid decongestion—

no excitation

no wakefulness

Benzedrex Inhaler produces almost no central nervous stimulation.

This volatile vasoconstrictor may therefore be used even by those patients in whom such ephedrine-like effects as insomnia, restlessness, or nervousness are frequently encountered.

The vapor of Benzedrex Inhaler opens intranasal ducts and ostia which are often inaccessible to liquids. It effectively relieves the congestion of head colds, allergic rhinitis and sinusitis.

Recommend Benzedrex Inhaler for use between treatments in your office.

Smith, Kline & French Laboratories, Philadelphia

Benzedrex Inhaler

the best inhaler ever developed

'Benzedrex' T.M. Reg. U.S. Pat. Off.

—Continued from page 60a

Stability of Vitamin B_{12} Solutions

Spectrophotometric examination showed that aqueous solutions of vitamin B_{12} at pH of 4.0 to 7.0 remained stable when exposed to diffused daylight for 1 week but exposure to sunlight for a few days resulted in considerable loss of activity. Solutions having a pH of 4.0 and 7.0 were found to be stable at room temperatures and, when prepared from a vitamin of 90 to 95 per cent purity, there was a small loss in activity when autoclaved at 115°C. for 30 minutes. When the solution was prepared from a vitamin of 70 per cent purity with a pH of 5.0, the loss was considerably greater. Hartley, Stross, and Stuckey, writing in *J. Pharm. Pharmacol.* [2:648 (1950)], also reported that the pure vitamin was stable in solution for 2 months in 0.5 per cent phenol and 0.3 per cent cresol.

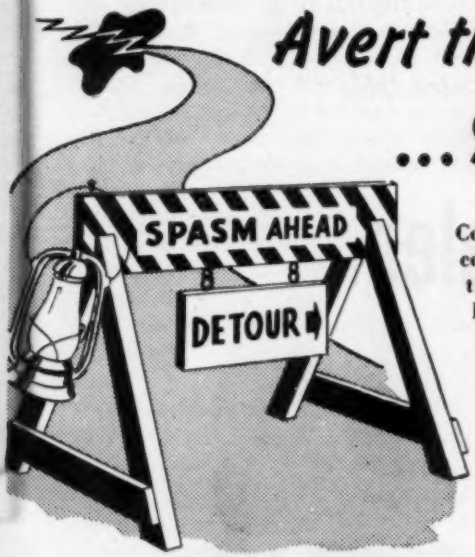
The authors therefore concluded that solutions of the pure vitamin are stable during normal handling for analysis and packaging but that heat should be avoided in sterilization. They recommended that a pH of 4.5 to 6.5 be employed and that the solution be sterilized by filtration with the addition of a bacteriostatic agent if necessary.

B_{12} in Infantile Eczema

Dr. John P. Dieterich, writing in the January 1951 issue of *Annals of Western Medicine and Surgery*, reports on the use of vitamin B_{12} in the treatment of a two year old girl who had been suffering from eczema from the age of five days.

All other therapy had provided little or no relief.

—Continued on page 64a



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Conveniently administered tablets, each containing aprobarbital 50 mg., homatropine methylbromide 2 mg. and hyoscine hydrobromide 0.0065 mg.* Provides sedation, both centrally and peripherally, to potentiate more effective spasmolysis in cardiac, pyloric, biliary and urinary spasm, and in many conditions associated with neurospastic disorders.

*Bibliography and Professional Sample on request.

SPASMOL TABLETS
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NO LAXATIVE LAG

with Sal Hepatica

When your patients ask about *fast* laxation recommend effervescent Sal Hepatica. There's no lag, no continuing discomfort while your patients wait for *this* laxative to act. Taken before the evening meal, satisfactory action is assured before bedtime, thus permitting a sound night's sleep. Taken in the morning before breakfast, laxation will usually occur within the hour.

Sal Hepatica's action is gentle, too, for its fluid bulk provides *soft* pressure.

Sal Hepatica suits your patients' convenience—and yours. Antacid Sal Hepatica also combats gastric hyperacidity which so often accompanies constipation.

*Aperient

*Laxative

*Cathartic

*Average dose

SAL HEPATICA, a product of BRISTOL-MYERS
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When the diet is deficient in vitamins

THERAGRAN offers your patients the clinically proved, truly therapeutic "practical" vitamin formula* recommended by Jolliffe. (Jolliffe, Tisdall & Cannon: Clinical Nutrition, New York, Hoeber, 1950, p.684.)

THERAGRAN supplies *all* of the vitamins indicated in mixed vitamin therapy in the carefully balanced, *high* dosages needed for fast recovery from mixed deficiencies.

Each Theragran Capsule contains:

Vitamin A	25,000 U.S.P. Units
Vitamin D	1,000 U.S.P. Units
Thiamine Hydrochloride	10 mg.
Riboflavin	5 mg.
Niacinamide	150 mg.
Ascorbic Acid	150 mg.

Bottles of 30, 100 and 1000

*Thiamine content raised to 10 mg.

When you want truly therapeutic dosages specify...

THERAGRAN

for therapy...

and correct the patient's diet

SQUIBB

—Continued from page 62a

Twenty drops of vitamin B_{12} was administered daily for one month. Then the dosage was reduced to 15 drops daily. Two weeks after this treatment was initiated, the condition completely cleared. There was a marked improvement in appetite and gain in weight.

Prophylaxis of Ophthalmia Neonatorium with Penicillin

A previous study of 9,241 consecutive newborn infants who were treated with intramuscular injections of 50,000 units of penicillin as a prophylaxis against gonorrheal ophthalmia revealed that not a single case of the disease developed. In the series reported by Davidson, Hill and Eastman in *J. A. M. A.* [*145*:1052 (April 7, 1951)] 4,163 additional newborn infants were treated with penicillin ointment containing 100,000 units per Gm., intramuscular injection of 10,000 units of penicillin in aqueous dispersion, or instillation of 2 drops of a 1 per cent silver nitrate solution, in weekly rotation. Signs of local irritation developed in 10.6 per cent, 13.8 per cent, and 51.3 per cent and discharge in 4.4 per cent, 7.5 per cent and 28.9 per cent, respectively.

In the 12,036 penicillin cases reported in this paper, sensitization was known to have developed in only one infant. The authors concluded that penicillin ointment was the most efficacious, the safest and the least irritating agent for the prophylaxis of gonorrheal ophthalmia in hospital practice.

Fumagillin Has Amebicidal Properties

A new antibiotic isolated from a species of Aspergillus was found to be capable of inhibiting *Staphylococcus aureus* 209 bacteriophage but to possess little or no antibacterial, antifungal, and antiviral activ-

ity. However, Fumagillin was found to be a very potent amebicide *in vitro* against *Endamoeba histolytica.*

A crude concentrate of the antibiotic was effective in a dilution of about 1:4,000,000 against *E. histolytica* in the absence of bacteria. Other *in vitro* tests showed that there was no influence on the effectiveness of the antibiotic in the presence of growing bacteria. Therefore, McCowen, Callender, and Lawlis, writing in *Science* [*113*:202 (Feb. 23, 1951)] concluded that the amebicidal action of the antibiotic was directly upon the amebae. The crystalline form of the antibiotic demonstrated activity in dilutions of 1:131,000,000.

In vivo tests on rats showed that the antibiotic cleared the animals of amebae with a total dose of 11 mg. per Kg. in divided doses over 2 days. When rabbits were used as the test animal a total dosage of 100 mg. per Kg. given in 4 doses over 2 days cleared the animals from the infestation.

Dilaudid Suppositories for Suppression of the Cough Reflex

Dilaudid (dihydroketomorphine) suppositories were used as the sole adjunct therapy to penicillin in the control of nonproductive cough in upper respiratory tract infections but negative chest findings in 33 children. One 2-year-old girl in this group had a severe cough causing edema of all the nasopharyngeal tissues with stridor in the breathing. Crystalline procaine penicillin G in oil with 2 per cent aluminum monostearate was given intramuscularly in a dose of 300,000 units. One suppository containing 1/48 gr. of Dilaudid caused subsidence of the cough in 15 minutes. Respiration was reduced from 40 to 15 per minute. A second suppository was required after about 7 hours and in 24 hours the inflammatory reaction in the throat had improved remarkably, no edema remained and the child accepted food, according to a report by Donelson in *J. Mich. Med. Soc.* [*50*:61 (1951)].

Therapeutic dosages give therapeutic results

"...recovery from a nutritional deficiency is usually retarded if one depends only upon the vitamins supplied in food." (Spies and Butt in Duncan: Diseases of Metabolism, ed. 2, Phila., Saunders, 1947, p.495)

When you want all *of the vitamins indicated in mixed vitamin therapy in the necessary* high *dosages* ... *specify* THERAGRAN

Each Theragran Capsule contains:

Vitamin A	25,000 U.S.P. Units
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Thiamine Hydrochloride	10 mg.
Riboflavin	5 mg.
Niacinamide	150 mg.
Ascorbic Acid	150 mg.

Bottles of 30, 100 and 1000

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THERAPEUTIC FORMULA VITAMIN CAPSULES SQUIBB

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NEWS AND NOTES

International College of Surgeons to Meet in Chicago

The sixteenth annual assembly of the United States Chapter of the International College of Surgeons will be held in Chicago on September 10th through the 13th, 1951, with headquarters at the Palmer House.

An excellent program has been arranged. Prominent surgeons from the United States and other countries will participate. Scientific sessions will be held by all specialty sections of the United States chapter.

The annual banquet will take place on Wednesday evening, September 12. Mr. Lawrence Abel, F.R.C.S. (Eng.) of London, will be the principal speaker.

The assembly will conclude with the convocation. To be held in the Civic Opera House on the evening of September 13. Senator Estes Kefauver will deliver an address on "The America of Tomorrow."

Hotel reservations may be arranged by writing to the Housing Division, Chicago Convention Bureau, 33 North LaSalle Street, Chicago 2, Illinois.

A New Antibiotic: "Aerosporin"

The new antibiotic, "Aerosporin" brand Polymyxin B, is now available. It was first isolated in 1945 in The Wellcome Research Laboratories and development has been continuous since then. Its importance lies in the fact that it is highly specific against organisms which generally escape the effects of other agents so far known. The shadow of pseudomonas (pyocyaneus) infection has continued to hover over medicine because *Pseudomonas aeruginosa* (Bacillus pyocyaneus) is notoriously resistant, as well as ubiquitous, yet it is very sensitive to "Aerosporin." Patients moribund from meningitis, septicemia, urinary tract and other systemic infections due to this organism have been dramatically restored to health by parenteral administration of "Aerosporin". Equally outstanding results have been obtained in conditions caused by *Aerobacter aerogenes, Hemophilus influenzae, Escherichia coli,* and *Klebsiella pneumoniae.*

Certain gastro-intestinal infections, notably those due to *Shigella,* are extremely responsive to oral doses of "Aerosporin," and negative stool cultures can be obtained in one to four days. The particular merit of "Aerosporin" in these cases, especially the chronic ones, is the rarity of relapse which is common after most therapies used to date.

Polymyxin B was selected from the five closely related polymyxins because of its relative freedom form serious nephrotoxicity; though mild albuminuria is occasionally seen, it does not persist; the drug has sometimes been used when renal damage was already present, and most careful watch revealed no aggravation of the condition. Common side effects following parenteral administration of "Aerosporin" in therapeutic doses are transient paresthesias and flushing; these, though dramatic, are not dangerous and disappear within 24 hours of withdrawing the drug. "Aerosporin" is to be given parenterally only to hospitalized patients; the oral product is available on a physician's prescription.

Dr. Sidney V. Haas Honored on Publication of New Book

The most important guests were not present at the Hotel Claridge in Atlantic City recently, when the New York Polyclinic Medical School & Hospital honored Dr. Sidney V. Haas, staff professor of

—Continued on page 68a

Why Alhydrox Adsorbed Dip-Pert-Tet* fits your pediatric picture

POTENT—Alhydrox increases the antigenicity of Dip-Pert-Tet. It helps build maximum, durable immunity simultaneously against Diphtheria, Pertussis, Tetanus. Each basic immunization course contains the high pertussis count of 45,000 million Phase 1 H. pertussis organisms. In actual use as well as reported clinical studies[1] it has been shown that Dip-Pert-Tet Alhydrox produces uniformly superior levels of serum antitoxins.

PURIFIED—Dip-Pert-Tet Alhydrox reduces reaction frequency. Try it—compare it in your own practice. You will see that undesirable reactions are reduced to a minimum with purified Dip-Pert-Tet Alhydrox.

Put Dip-Pert-Tet Alhydrox in your pediatric picture. You can depend on it for simultaneous immunization against Diphtheria, Pertussis, Tetanus. *Cutter Laboratories, Berkeley, California*—Producers of famous purified Dip-Pert-Tet Plain, a product of choice for immunizing older children and adults.

* *Dip-Pert-Tet Alhydrox*
—Purified Diphtheria and Tetanus Toxoids and Pertussis Vaccine combined, Aluminum Hydroxide adsorbed.

Insist on CUTTER DIP-PERT-TET ALHYDROX®

A FIRST NAME IN COMBINED TOXOIDS

[1] *References on request*

Cutter Laboratories, Berkeley, California.

NEWS AND NOTES

—Continued from page 66a

Pediatrics, with a testimonial buffet-supper, on the occasion of the publication of his "Management of Celiac Disease." These guests were the 75,000 children Dr. Haas, now 81, has treated during his 53 years as a physician. Dr. Haas still practices pediatrics in New York City.

"Management of Celiac Disease" represents the combined research efforts and experience of Dr. Sidney V. Hass and his son, Dr. Merrill P. Haas, also a pediatrician. Dr. Haas has a world-wide medical reputation as a pediatrician for establishing the value of the banana diet in the dreaded celiac disease and the use of atropin in pyloric spasm.

Dr. W. Morgan Hartshorn, Consulting Pediatrician, Pediatric Department of the New York Polyclinic Medical School & Hospital, presented Dr. Haas with a testimonial scroll which cites his contributions to medical knowledge and the welfare of mankind.

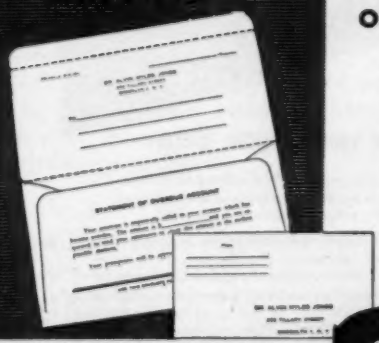
Awards to Illinois Medical Students

Robert J. Maganini, third-year medical student, has been awarded the 1951 Leo F. Miller Prize at the University of Illinois College of Medicine for his presentation of an essay in the field of orthopaedic surgery.

Awarding of the prize, which carries a $50 stipend, was announced by Dr. Fremont A. Chandler, professor and head of the department of orthopaedic surgery. The prize-winning essay was entitled "Solitary Unicameral Bone Cyst."

—Continued on page 70a

ARE YOUR COLLECTIONS SLIPPING ?



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A NEW COLLECTION IDEA THAT OBTAINS REMARKABLE RESULTS

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a simple solution to a complex problem

Rapid and effective hemoglobin regeneration in the anemic patient presents a complex problem which necessitates:

- adequate supply of the structural components of hemoglobin.
- stimulation of the hemopoietic tissues.
- correction of vital enzyme dysfunctions resulting from lack of minerals, trace elements and vitamins.
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NEWS AND NOTES

—Continued from page 68a

A second place award of $15 was presented to William S. Johnson for his paper on "Traumatic Injuries of the Menisci." George A. Hart received the third place prize of $10 for his essay on "Spondylolisthesis."

Honorable mention was awarded to Hyman L. Cohen, Martin E. Blazina, and Frank L. Meyer.

Hostile Maternal Relationship Blamed for Some Child Eczema

Some cases of eczema in young children can be traced to a hostile mother-child relationship, according to a dermatologist of Vancouver, British Columbia.

Dr. Donald H. Williams, writing in a recent issue of *Archives of Dermatology and Syphilology*, published by the American Medical Association, reports on his study of 53 children with allergic eczema. Maternal rejection, he said, was a common observation in all the children—that is, "rejection by the one human being who was closest and on whom he was most dependent, the mother."

The children—between the ages of 13 months and 12 years—had chronic eczema involving mainly the arms, legs and face. In most instances the rash first became evident during the year following birth.

For purposes of comparative study, Dr. Williams divided the children into two groups. In the first group, 33 in number, emphasis was put on improvement of the mother-child relationship. In the second or control group of 20 children the emphasis was on treating the rash itself.

Dr. Williams reported these results at the end of a 24 month period:

Fifteen (45%) of the children in the group with emphasis on management of the mother-child relationship were symp-

—Continued on page 72a

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NEWS AND NOTES

—Continued from page 70a

tom free. In the control group only two (10%) had clearing. The children in the first group who became symptom free did so in the seven months after starting treatment, 11 of them having clearing in three months. In the control group the children who became symptom free did not have clearing until the 15th and 18th month, respectively.

Three of the children in the first group had no change and four in the control group had no improvement. Fifteen were improved in the first group and 14 in the control group.

He explained:

"Of the three children in the group in which maternal rejection was emphasized who were unimproved after 24 months, two lived in disturbed homes with irreconcilable tension between the parents and in the third instance the mother was very hostile to the idea that she might unwittingly be playing a role in the child's distress and insisted that the child was allergic to foods."

The program of instruction to the mothers of the children in the first group, Dr. Williams said, consisted of discussions as to the basic emotional needs of a child, the effect on the child if these needs were not provided, and the means of providing them.

The mothers were told that a mother's love is expressed by tender acts and words toward the child which satisfy the basic emotional need of every child.

"Withdrawal of tender, expressed maternal affection from the atopic child [one hypersensitive] is associated with anxiety or distress which exhibits itself in the form of the characteristic itching of eczema and as resistive, willful hostility toward the mother," he said.

—Continued on page 74a

THE A-B-C OF PSORIASIS RESULTS WITH RIASOL

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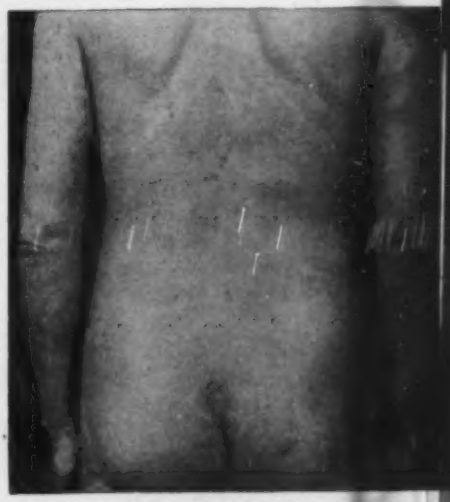

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NEWS AND NOTES

—Continued from page 72a

Some mothers, he explained, do not appear to have the ability to express affection spontaneously to any great degree. It is, therefore, essential for her to cultivate the behavior of affection toward her child, he added.

Gift to N. U. Medical School

Northwestern University's Medical School has received a gift of $2500 from the Bristol Laboratories of Syracuse, N. Y.

Dr. Richard H. Young, dean of the Medical School, said the money will be used to establish a Bristol Fellowship. The fund will pay the salary of a fellow in the Department of Biochemistry working under the direction of Dr. E. A. Zeller.

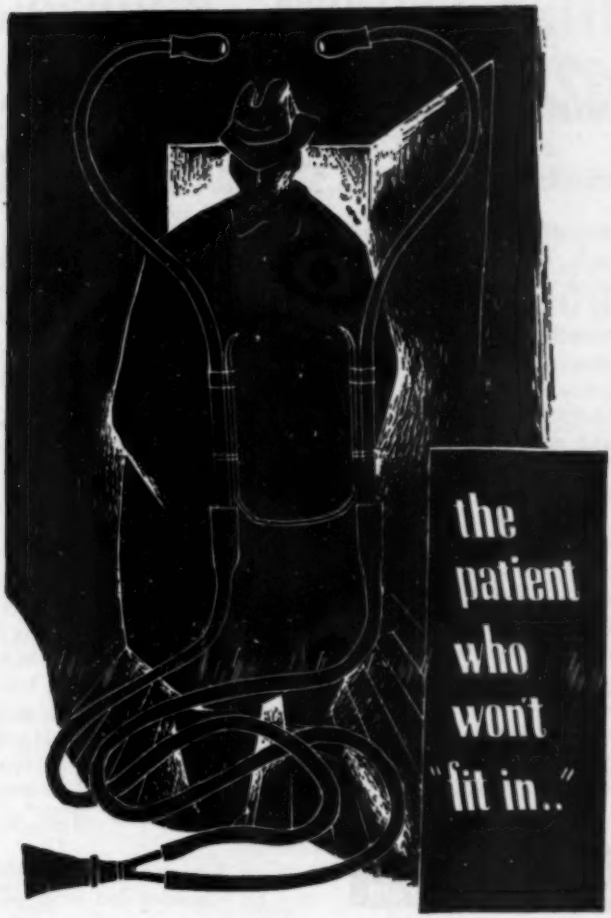
Epilepsy Need Not Be Handicap, Says Nerve Doctor

Epilepsy in most instances should not interfere with the normal activity of individuals suffering from that condition, in the opinion of Dr. Lewis J. Pollock of Chicago, a nerve specialist.

In most cases the attacks are controllable, Dr. Pollock emphasized, writing in a recent issue of *Today's Health*, published by the American Medical Association. He summed up "What is epilepsy?" in this way:

"It is not related to feeble-mindedness; it is not, nor does it lead to insanity; it is not associated with, nor does it lead to delinquency, vice, crime or mental deterioration. In most instances, it should not interfere with good health, education, technical or professional training, or commercial, manufacturing or professional pursuits. It is compatible with courtship, marriage, bearing and rearing children, the pursuit of happiness and normal social life and good citizenship. It bears no shame. It deserves only that amount of

—Concluded on page 76a



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NEWS AND NOTES

—Concluded from page 74a

compassion freely given to those who have some other illness."

Epilepsy, meaning to be seized, he said, may be the result of injury or disease of the brain or of certain bodily disease. In many cases, however, the cause is not known, he said.

Dr. Pollock described two main types of seizures. Grand mal or big attack, he said, is easily identified as a fit by any layman. Petit mal or little attack was described as a momentary lapse of consciousness, a short black-out or only a peculiar feeling. Often the person automatically continues what he has been doing, or he stops speaking temporarily, and may stare or smack his lips, he said. Repeated periods of excitement, rage or confusion, sleep-like states, or sudden twitching of the shoulders, as if startled, may constitute an attack.

"It is especially necessary," he continued, "to recognize recurrent attacks in infancy and young childhood, which may indicate the beginning of the disorder or call attention to the possibility of its later development."

Although infantile convulsions, such as occur with fever, upset stomach or cutting of teeth, are not forerunners of later epilepsy, he said, repeated convulsions are evidence of an increased chance of late epilepsy.

"Convulsions occurring on one side of the body after the fourth year and generalized convulsions lasting one and a half hours and followed by several hours of confusion or sluggishness are especially significant for the later development of epilepsy. Head-banging and breath-holding to the point of blueness of the skin and loss of consciousness should be reported to a physician as soon as they are observed. Repeated dizzy attacks of a very short duration and screaming followed by limpness likewise have a serious import."

Dr. Pollock feels that a child with a convulsive disorder should be informed about it just as soon as he is able to reason well, to understand and to adjust to difficult situations.

"Such frankness helps prepare a patient for education and social adjustment and if he has been unaware of the attacks, as many children are, it adds to the success of treatment which he may have thought unnecessary," he added.

He pointed out that there is no miracle drug or surgical procedure that can cure epilepsy at present, but that the attacks can be controlled in at least 70 per cent of all cases not due to organic disease.

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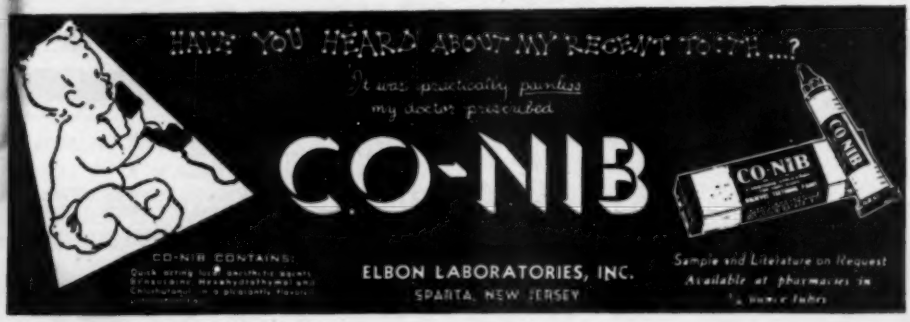

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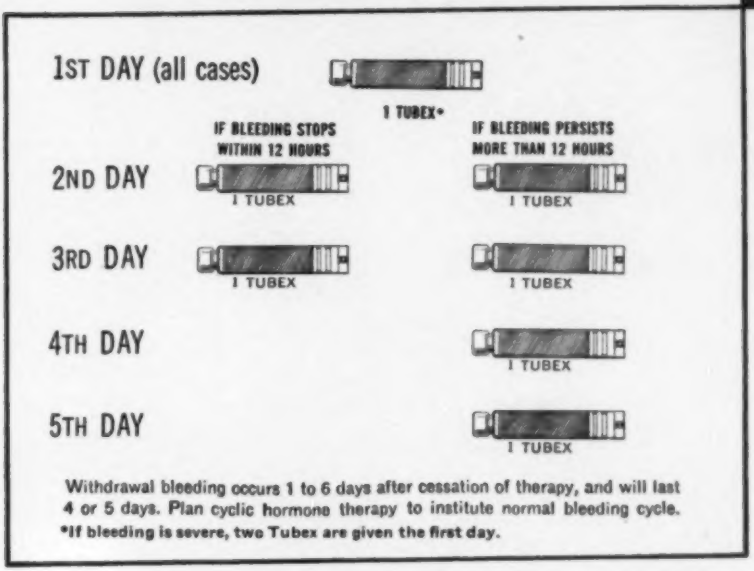

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